Township Huron-Kinloss

Community Risk Assessment 2023

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ACRONYMS

AODA	Accessibility for Ontarians with Disabilities Act
BCPS	Bruce County Paramedic Service
CBRNE	Chemical Biological Radiation Nuclear Explosive
CRA	Community Risk Assessment
CRRP	Community Risk Reduction Plan
EMG	Emergency Management Group Inc.
EOC	Emergency Operations Centre
ERP	Emergency Response Plan
FPPA	Fire Protection and Prevention Act
FPO	Fire Prevention Officer
HAZMAT	Hazardous materials
HKFES	Huron-Kinloss Fire & Emergency Services
HIRA	Hazard Identification and Risk Assessment
IFSAC	International Fire Service Accreditation Congress
IMS	Incident Management System
LPG	Liquified Petroleum Gases
LWC	Lightweight construction
MECG	Municipal Emergency Control Group
MVC	Motor vehicle collisions
NBC	National Building Code

ACRONYMS

OBC	Ontario Building Code
OFC	Ontario Fire Code
OFM	Office of the Fire Marshal
PFLSE	Public Fire Life Safety Educator
PPE	Personal Protective Equipment
PTSI	Post-Traumatic Stress Injury
PTSD	Post-Traumatic Stress Disorder
RMS	Records Management System
SCBA	Self-contained breathing apparatus
SOG	Standard Operating Guideline
SOP	Standard Operating Policy
TFRS	Tillsonburg Fire and Rescue Services
TSSA	Technical Standards and Safety Authority
WETT	Wood Energy Technology Transfer

Introduction

INTRODUCTION

Completing a Community Risk Assessment (CRA) allows the Township of Huron-Kinloss (hereafter 'the Township) 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 Township of Huron-Kinloss and the Huron-Kinloss Fire & Emergency Services (HKFES). It follows the Office of the Fire Marshal's (OFM), Regulation 378/18, which came into effect on July 1st, 2019. The OFM regulation requires municipalities to complete a new CRA every five years.

This document has three sections:

- Section 1 – General Risk Overview: A general community overview and summary of the key risks identified in the community.
- Section 2 – Profile Risks and Preferred Treatment Options: Is a culmination all the profile worksheets (required by the Office of the Fire Marshal).
- Section 3 – Appendices: This section contains all OFM-related worksheets and data retrieved during this CRA.

The reader can obtain an overview of the Township's risks in section 1 and utilize sections 2 and 3 as supporting information.

Community Overview

The Township of Huron-Kinloss became incorporated in 1999 and is a member municipality of the County of Bruce, situated on the shore of Lake Huron. The municipality was formerly the municipalities of the Village of Lucknow and the Townships of Huron and Kinloss. Its land mass of 440.73 km² has a population density of 17.54 km².[1] The small communities within the township include Lucknow, Ripley, and Point Clark, with histories dating back 150 years.

The Township is maintaining its primarily rural setting with an agriculture-driven economy. Tourism is a large draw of visitors year-round, with many taking advantage of the beaches along Lake Huron in the Lakeshore area. Point Clark hosts an imperial lighthouse tower dating back to the 1860s. The lighthouse is a designated historical site by Parks Canada. The population of the Lakeshore area swells in the summer with many seasonal residents and visitors.

The Bruce Power Generating Station, located along the shores of Lake Huron in Kincardine, is also a robust support mechanism for the region's economy by employing over 4,000 people

[1] Profile table, Census Profile, 2021 Census of Population - Huron-Kinloss, Township (TP) [Census subdivision], Ontario (statcan.gc.ca), Accessed June 5, 2023, https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Huron%2DKinloss&DGUIDlist=2021A00053541015&GENDERlist=1,2,3&STATISTIClist=1,4&HEADERlist=0

from the area.[3] A deep geologic repository that stores nuclear waste from across Canada is proposed to be constructed in either the Township of Ignace or the Municipality of South Bruce. The Municipality of South Bruce borders the east side of the Township of Huron-Kinloss.

What is Risk?

Risk measures the probability and possibility of an event that could adversely affect the community including health, property, organization, environment, and community. 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 safety plan, 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 fire safety plan through education, code enforcement, and emergency response. Although emergency response (fire suppression) will always be required, this is a reactive endeavour. A fire service must proactively optimize public fire safety programs within the community.

[3] "Bruce Nuclear Generating Station," Wikipedia, Accessed June 5, 2023, https://en.wikipedia.org/wiki/Bruce_Nuclear_Generating_Station#:~:text=Bruce%20Nuclear%20Generating%20Station%20is%20a%20nuclear%20power,plant%20was%20constructed%2C%20now%20Kincardine%20due%20to%20amalgamation.

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 responsibilities for their fire safety is a proven method of reducing the incidence of fire. Only by educating residents can fires be prevented and can those affected by fires respond 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.
3. Emergency Response	Fire departments need to have well-trained and equipped firefighters directed by capable officers in suppressing the spread of fires once they occur and assisting in protecting residents' lives and safety.

The CRA process informs the fire department by incorporating methods and recommendations based on the Three Lines of Defence. This assessment directs fire services in determining the service levels concerning public fire safety education, Fire Code inspections and enforcement, and emergency response.

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

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.

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

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.

Demographic Profile: This profile identifies age groups, economic, visible minorities and Indigenous peoples, and any risks in each.

Hazard Profile: This profile analyses the critical hazards of the Township based on data found in the Township's Hazard Identification and Risk Assessment (HIRA).

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

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

Economic Profile: Identifies challenges relating to a community's economic sustainability if an event occurs, such as the loss of power, telecommunications, water, and weather.

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

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) as found in O. Reg 217/22.[5] This requirement does not include houses per amendments to the OBC. LWC techniques are used in the following construction materials: wooden "I" beams, fastening systems, lightweight steel frame construction, other engineered construction components, and roof trusses. This type of construction can lose its integrity and fail quickly once flame impingement occurs, which is a high risk to the occupants and firefighter safety.

Fire departments should maintain the annual documentation required by O. Reg. 378/18. 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.

[4] Office of the Fire Marshal's communiqués 2022, Accessed June 2, 2023, https://www.ontario.ca/page/office-fire-marshals-communiques-2022#section-6

[5] O. Reg. 217/22: BUILDING CODE (ontario.ca), Accessed June 2, 2023, https://www.ontario.ca/laws/regulation/r22217

- Any other information the fire department deems appropriate to the review or changes to fire protection services.

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

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 Township's Critical Infrastructure and HIRA documents.*
- *The Fire & Emergency Services Strategy Plan refers to two fire services:*
- *Lucknow Fire Station*
    - *Ripley-Huron Fire Station*
- *To complete this CRA, the name Huron-Kinloss Fire & Emergency Services represents all fire departments in the Township.*

During the original composition of the Community Risk Assessment and Fire and Emergency Service Strategic Plan, the Fire Chief provided information about the HKFES. The current fire chief has provided several updates, which are included in this document.

SECTION 1

Overview of Risks

SECTION 1 – OVERVIEW OF RISKS

This section outlines the top risks to life safety and property 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 risks, including public education and Fire Code 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 Township's Community Risk Reduction Plan (CRRP).

A thorough review coupled with sound strategic planning will garner successes in the form of 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.

Note: *The following features have not been listed in the order of their level of risk.*

Bodies of Water – Lake Huron borders Huron-Kinloss, presenting risks. These include storm surges, vessel incidents such as fires or taking on water, and ice/water rescues. There may also be incidents involving aircraft landing on Lake Huron. The HKFES 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 By-law.

At present, the HKFES level of response is shore-based only, which means firefighters remain on land to conduct shored-based rescue using throw ropes. The Fire Chief should develop mitigation strategies to respond to water-related incidents beforehand so that a predetermined plan is in place. The program may include response agreements with outside fire services or third parties.

Radio System – There were some upgrades to the radio system in 2021. These improvements to the radio system did not include the replacement/upgrade of all the radio transmitting equipment to the digital platform from the current analogue. A radio system audit by the HKFES may suggest moving the department to the digital radio platform. Some radio manufacturing companies are no longer supporting their products with older technologies. This changeover will expose the Township to a significant investment; HKFES should begin the budgeting process by placing funds in a reserve account for future use.

Fire Stations – An assessment of the current and future needs of the fire stations is made in the Strategic 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, while in other cases moving the fire station to a new location may improve service response times. The current stations lack post-disaster engineering components, exhaust extraction

systems, and in some cases, bunker gear storage rooms equipped with negative-pressure ventilation systems. They also lack proper fitness room components.

Hazardous Material Incidents – Under the E&R Bylaw, the HKFES responds to hazardous materials (HAZMAT) incidents per NFPA 472, *Standard for Competence of Responders to Hazardous Materials/Weapons of Mass Destruction Incidents,* at the Operations Level. This level of response requires firefighters to meet mission-specific competencies for controlling specific chemical leaks. This deficiency may cause a delay in the incident's control and mitigation as responders wait for outside resources to arrive. This condition restricts response levels to HAZMAT incidents as, in some situations, the firefighters lack training in handling all chemicals.

The HKFES should develop a mitigation strategy for handling HAZMAT incidents in which the Department does not have the equipment and training. The plan may include entering into response agreements with outside fire service or third parties.

Technical Rescues –These rescues include trench, confined space, high- and low angle, and elevator. The mitigation of technical rescues requires that SOGs, policies and procedures, equipment, and training specific to each discipline are in place. HKFES currently responds at the awareness level for each call type which restricts their level of participation in completing the rescue. A response mitigation strategy that includes response agreements needs to be developed and receive Council's approval.

Elevator rescues should not occur until SOGs, equipment acquisition, and training are in place. The firefighters must train to the standards established by the Technical Standards and Safety Authority (TSSA). Fortunately, some members of the Lucknow station have completed elevator training. Only those trained in this discipline should participate in an elevator rescue.

Weather Events – This area of Southern Ontario is known to receive severe weather events ranging from snowstorms to extreme wind events, tornadoes, and thunderstorms. Consider an early warning system (i.e., an app residents could install on their cell phones or convert the sirens on the fire stations to storm sirens).

The severity of some weather events may require the activation of the Township's Emergency Operations Centre (EOC). The Township's staff have prepared for such events that included training exercises that include participation by members of the Township's Control Group and allied agencies.

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, seasonal facilities, and within the family home. Situations have appeared in several Canadian cities with catastrophic consequences.

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 combined 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."

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.

Industries – The Bruce Power nuclear generating station uses nuclear technologies to generate power, presenting industry-specific risks. These include radiological exposure and injuries. While the plant is not in the Township of Huron-Kinloss, it is within a 30-minute drive and the effects of a radiation leak could drift toward the Township by prevailing winds. In extreme cases, evacuation orders may need to be issued.

Waste material, including radiation-contaminated items from the site, may be stored in the Municipality of South Bruce in storage facilities deep in the earth. A Deep Geological Report is available within the Strategic Plan. The Township should conduct training exercises, as its annual emergency management exercises, that include members of the Municipal Emergency Control Group (MECG), its allied agencies, and representatives of the Nuclear Waste Management Organization of the proposed DGR's site in South Bruce.

Demographics – Demographic statistics are constantly growing and are forecasted to grow between 25% to 40% in Bruce County between 2021 and 2046.[6] With this anticipated growth, there will be an increase in 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 HKFES may need to review their current capacity to meet the required number of inspections and public education events versus the need for additional resources, including acquiring a full-time Fire Prevention Officer (FPO)/ Public Fire Life Safety Educator (PFLSE).

Deep Geological Repository (DGR) - This risk assessment utilized a layered approach to provide critical details about the South Bruce proposed site due to its proximity to Huron-Kinloss. Nuclear power supplies half of the electricity in Ontario. Power plants securely store used nuclear fuel in temporary above-ground facilities at seven sites across Canada. Finding a safe, permanent solution to storing nuclear waste is the responsibility of The Nuclear Waste

[6] "Ontario population projections," Ontario, Accessed July 06, 2022, https://www.ontario.ca/page/ontario-population-projections

Management Organization. Globally, the safest long-term option is storing waste in underground reinforced facilities.

The proposed site is not in the Township, however, preparation for handling an event during transportation or waste handling is vital. This preparation may include a section of the Township's Emergency Response Plan (ERP) dedicated to nuclear-related incidents relating to the repository and its contents. A nuclear incident may have long-term effects on the Township.

Building Stock - With existing and new residents living in the Township, there could be illegal second units and apartments. The Township should require every second unit and garden suite to be registered and licensed with the Township and be inspected by HKFES. While permitted, secondary dwelling units and garden suites must comply with Ontario Building Code (OBC) and OFC requirements.

There is also an unknown number of short-term accommodations in the Township. No by-law regulates these accommodations. Owners of these businesses must be aware that they must comply with municipal by-laws such as Property Standards and Open-Air Burning.

A short-term accommodations by-law could regulate this industry which also calls for the registry of fire inspections of these locations.

Based on house insurance requirements, a Wood Energy Technology Transfer (WETT) inspection should be completed with all residences having wood-burning appliances to ensure compliance with building and manufacturer's installation requirements.

Building Stock – The OFM has identified the risks associated with occupancies incorporating LWC practices. Municipalities are to inventory all building stock, including LWC practices. Failure to comply with this requirement is illegal and exposes the Township to significant fines. HKFES and the Building Department should collaborate to develop an ongoing list of all building stock based on the OBC Occupancy Classifications.

Points for Consideration Based on Identified Risks

***Note**: The following may or may not directly relate to the fire department's operations.*

- Fire prevention focuses on the first two lines of defence noted by the OFM – public education, and safety standards and enforcement. They have changed the name of 'Fire Prevention' to 'Fire Prevention and Risk Reduction' to reflect the general duties performed.
- The Fire Chief of HKFES is the FPO/PFLSE. With all the other responsibilities of a Fire Chief, they have limited time to address fire prevention or public education issues.
    - The goal is to create a fire-safe community by reducing or eliminating risks. HKFES must identify the goals and overall outcomes its fire prevention program wishes to achieve.
    - HKFES updated its Fire Prevention Policy for the department in 2022. The policy should be an appendix to the Establishing & Regulating By-Law.
    - The fire prevention policy mentions the need to complete a CRA. It should also include the requirement for the Township to maintain an inventory of its building stock per OFM Directive 2022-001.
    - The Township needs to review its short and long-term capabilities in having an efficient and productive fire prevention program. This review includes adding resources, primarily a full-time dedicated FPO/PFLSE.
    - A viable alternative is the Township, in cooperation with a neighbouring municipality, combine resources in hiring a full-time FPO/PFLSE that divides their time between the two communities.
        - This new position would aid in relieving the Fire Chief's increasing workload and the need to bring HKFES in line with the OFM's first two lines of defence.
        - In the interim, employ firefighters who have completed their IFSAC/Pro Board certification to NFPA 1031 and/or 1035 to relieve some pressure. Until they garner a higher level of experience, they should not be assigned to complete complex inspections.
- Radon gas is naturally occurring, colourless, odourless, tasteless, invisible, radioactive, and cancer-causing. The gas is a by-product of the decaying processes of uranium minerals found in rock, soil, and water. This gas easily seeps into homes where the effects of inhaling can lead to lung cancer, especially in non-smokers. Research has linked radon gas to 16% of all lung cancer deaths in Canada.[7] It is second to smoking as a cause of lung cancer.
    - The Grey Bruce, Public Health Unit, encourages the residents to obtain radon gas testing kits.

[7] "Radon," Grey Bruce Public Health, Accessed July 2, 2023, https://www.publichealthgreybruce.on.ca/Your-Environment/Healthy-Housing/Radon

    - With so little known by the public, a public education program on the dangers of this naturally produced gas would aid in educating homeowners about this risk.
    - The Township should work with local hardware stores to ensure that test kits are available.
- Many new requirements such as Next-Generation 9-1-1 and the firefighter training and certification programs imposed on lower-tier municipalities may make it difficult to meet the financial challenges while maintaining fiscal responsibility to the taxpayers.
- Establish reserve accounts for fire apparatus replacements.
    - The Lucknow Pumper was recently replaced in 2023, while the Ripley Pumper has been ordered and is being replaced in 2024. These purchases cost the department several million dollars.
- Determine whether the fire stations have the capacity to house a 2,500-gallon (11,365 l) tanker.
    - Liquidate the current tankers before their end of life (according to FUS standards) and use the funds received to offset the purchase of larger tankers. As mentioned, consider purchasing a previously leased apparatus from the United States.
- After a residential fire, HKFES should conduct a blitz of the residences in the immediate area to highlight the importance of having escape plans and working smoke and CO alarms—partner with local businesses and stakeholders in providing "giveaways" that focus on fire safety.
- Identify the location(s) of structures falling into a state of disrepair. Due to the COVID-19 pandemic, the number of vacant buildings has increased. The Township will need to monitor these occupancies. HKFES should develop response protocols, including pre-incident plans, for attending these structures.
    - It may require involvement of Building and/or Property Standards Departments.
- A robust fire prevention program that includes community engagement by the HKFES could reap many benefits for the department and the community. Any of the following points could aid in achieving this:
    - Promote community engagement by developing and distributing questionnaires regarding the operations and service provision of the HKFES.
    - Develop a questionnaire that focuses on the service and professionalism of the suppression crews and a separate one that focuses on fire safety and prevention.
    - Mail them to addresses that suppression crews attended, excluding all medical-related calls. Distribute them quarterly and measure the responses.
    - A cover letter will outline the purpose of the questionnaire and encourage participation.
    - Create a similar document that focuses on fire safety and fire prevention. These could include smoke and CO alarm-related questions, safe cooking practices, home escape plans, fire extinguishers, etc.
- Continue the public education initiative promoting smoke and CO alarms, escape plans, and fire extinguishers.

    - HKFES should target areas where permanent and seasonal residents reside, shop, and frequent with appropriate fire safety materials such as brochures.

- Many fire services provide literature, known as "After the Fire" booklets, to the residents who have had a fire in their residence to understand the department's actions, facts about property loss, processing insurance claims, etc.
    - HKFES should explore the opportunity of developing an "After the Fire" booklet in cooperation with the other fire services in Bruce County. The booklet could include lists of whom to notify in the event of a fire, such as their insurance company, banks, employers, utilities, family members (so they do not hear about it in the media), building inspectors and contractors, etc.
- Use mainstream media such as radio, television, and newspapers to the advantage of the fire service in sending out fire prevention and public education messaging. The need to reach out to new residents is especially prudent.
    - This initiative could include partnerships with local service groups or businesses in promoting fire safety.
    - Post relevant fire safety messaging about a recent fire on HKFES page on the Township's website.
    - The HKFES should establish Twitter, Facebook, and Instagram accounts for real-time messaging during emergencies.
- The HKFES has not been conducting door-to-door checks whereby the firefighters go out in the community to promote smoke and CO alarm installations, alarm maintenance, and home safety planning. Firefighters going door-to-door will identify locations that have faulty alarms. Smoke alarm programs are a requirement of the *Fire Protection and Prevention Act (FPPA)*, 1997.
    - The program focuses on communities that are a long distance from fire stations. The areas over an eight-minute travel time should be the primary focus. Other regions that HKFES should focus on include seasonal residences, trailer parks, and older subdivisions that do not require fixed smoke alarms installed under the building code.
    - The members offer to check the residence to ensure the installation of adequate smoke and CO alarms in the proper locations for optimum exposure and operations.
    - HKFES should partner with service clubs or organizations to aid in the delivery of the program, either financially or through community engagement. There is no history of HFES taking advantage of public/private partnerships to deliver public education.
    - Some companies provide free smoke and CO alarms to fire departments to distribute.
    - To the fire department's credit, they carry spare smoke and CO alarms onboard the apparatus to ensure working alarms are in place before leaving a scene.
- Statistics show that residential sprinklers save lives and reduce fire loss. While they may not extinguish the fire, they will aid in controlling it, which may provide time for the

occupants to escape. In turn, property owners may reap savings on insurance costs and see an increase in the property value.

  - Fire Prevention must enhance promotion of the value of residential sprinkler systems.
  - Develop and publicize demonstrations on the advantages of having residential fire sprinklers.
  - With new residential developments, Fire Prevention could work with the developer/builder to promote residential sprinklers as an "add-on" in new home construction.

- Currently, there are no structures above five storeys in the township. High-rise structures of seven storeys or greater require at least 42 firefighters to complete suppression activities correctly. A minimum of 17 firefighters is needed on-site for a residential structure fire less than seven storeys. Daytime availability of firefighters is becoming a challenge, which is further complicated as higher structures require a more significant number of firefighters and specific apparatus (aerial device) on the scene.
  - The HKFES may need to increase the staffing roster at the fire stations. This increase may be difficult due to the lack of space in some fire stations to accommodate the additional equipment for more volunteer firefighters.
  - When hiring recruits, focus on those with daytime availability.
  - Ensure current SOGs, policies, procedures, and training on battling high-rise fires are available.
- Ensure equipment for fighting fires in multi-unit occupancies, and those with hose cabinets, is in place and current.. This should include the operation of standpipes for sprinklers and hose cabinets required would includea thermal imaging camera, 38- and 65-mm hose packs and appliances, and tool packs that contain a Halligan bar and fire axe.

New Technologies in the Fire Service

Tablets Mobile Data Terminals

Many volunteer fire departments in Ontario are now installing tablets or mobile data terminals (MDTs) in their apparatus to access information from the municipality's server or internet provider, etc. The information available would include weather for HAZMAT incidents, access to HAZMAT reference material, pre-incident plans, fire prevention files, mapping, and connections to the Computer Aided Dispatch (CAD) program.

There are other non-suppression uses for tablets in the field, such as completing fire inspections and delivering public education.

- Over time, evaluate the value of tablets, and if found to have a purpose in the HKFES, acquire additional units.
    - Install external antennas on the vehicles to ensure connectivity.

Drones

Fire services in North America are embracing drones for emergency and non-emergency roles. Using drones in the fire service is a growing trend as a multi-purpose tool that can assist with large-scale assessments of fireground and HAZMAT incidents, enhance search and rescue functions, and pre-incident planning.

Reducing risk to firefighting personnel and the live view capabilities that provide invaluable information are significant benefits of drone technology. Drones can cover much ground, thus allowing valuable fire department personnel to be assigned elsewhere. They have proven beneficial for HAZMAT incidents, wildland fires, and large-scale emergencies. The Incident Commander Drones can deploy a drone rapidly, which provides a live view of the incident.

Many fire departments in Canada use drones, from large metro fire departments like the Winnipeg Fire Paramedic Services to volunteer fire departments like the Midland and Penetanguishene Fire Departments. Midland and Penetanguishene acquired theirs drone as a joint purchase.

Some drones can carry a payload such as warm clothing, first aid supplies, or nourishment. They have value when conducting a marine-related search and rescue operation (i.e., transporting a personal flotation device to the victim).

- The HKFES should review the value of acquiring a multi-purpose drone through a public/private purchase or jointly with a neighbouring fire department.
- Drone pilots must follow the Canadian Aviation Regulations (CARs) Part IX-Remotely Piloted Aircraft Systems, which contain the rules for drones up to 25 kg. Advanced

operations include flying in controlled airspace, flying over bystanders, or flying within 30 m of bystanders.

HAAS Alert App

First responders may be involved in an MVC enroute to an incident or at the scene. Once emergency warning systems are activated, approaching vehicles will receive real-time messages. The app advises motorists that the emergency services are responding to an incident and to be prepared to slow down and move to the right.

This app notifies drivers of emergency vehicles responding/attending to calls and traffic delays so they may take alternate routes.

Communications operators can track the location of emergency vehicles to ensure the closest units get dispatched to incidents.

- As many municipalities have already signed onto it, the County of Bruce Emergency Services should establish a committee to review this opportunity. It has proven to reduce the risk of accidents while providing a safer work environment.

Review of By-laws

Rates and Fees By-Law 2023-129, Consolidated in 2024

A Consolidated Fees By-Law for services provided generates revenue for the fire service to offset the operating costs of the fire department. The Township is permitted to charge for services provided, as outlined in the *Municipal Act* of Ontario (2001), Part XII.

The Township has by-laws for charging fees for several municipal services, primarily in agreements with partner entities and agencies. The service fees currently being charged should be reviewed and enhanced. Doing so will capture more invoicing opportunities for the services provided by the fire department.

Another form of revenue generation is invoicing all fire responses to the property owners' insurance companies through a third-party company specializing in these services. The Township of Huron-Kinloss is like many municipalities in the province have implemented such means to aid in offsetting the cost of operating the fire service. Within insurance policies for vehicles and structures, there are provisions for the payment of services provided by fire departments.

Noise By-Law – 2005-101 (Discharge of Fireworks)

Huron-Kinloss Noise By-Law regulates the discharge of fireworks. Within the by-law, the following clauses mention fireworks:

- 3.2 The detonation of fireworks or explosive devices not used in construction shall be prohibited at all times.
- 6.1 allows for exemptions in part d) that allows "Fireworks in association with Canada Day or Victoria Day celebrations."

Most municipalities have a stand-alone by-law specific to selling and discharging fireworks. They include recreational usage specifics, public high hazard displays, and those released during a show or music concert (pyrotechnics).

The municipal authority to control fireworks rests within the OFC O. Reg. 213/07, Division B, Part 5, ss 5.2.

Include the following in a stand-alone Fireworks By-Law:

- Reference the actual federal regulation regarding the training required to set off commercial and pyrotechnic fireworks. This will direct those who need this training and education and assist them in locating the supporting information. The by-law should list the differentiation between the consumer, display, and pyrotechnic fireworks, as listed in the *Explosives Act, R.S. C. 1985, c. E-17*.[8]
- Include the need for documentation of having completed the Display Fireworks Safety and Legal Awareness Training through the authority of the Explosive Regulatory Division of Natural Resources, Canada.
- Those that use special effect pyrotechnics, which includes visual gunshots in a stage production, or provide a waterfall of sparks at a musical concert or an explosion on a movie set, must have a Pyrotechnician certificate specific to the type and purpose of the pyrotechnic used.[9] There are four classes of certification for the use of pyrotechnics.
- The individual responsible (supervisor) for discharging high-hazard professional fireworks and their assistant(s) must have obtained their Fireworks Operator Certification.[10]

[8] Explosives Act (justice.gc.ca), Accessed June 13, 2023, https://laws-lois.justice.gc.ca/eng/acts/E-17/page-1.html#docCont

[9] Fireworks operator certification (canada.ca), Accessed June 13, 2023, https://natural-resources.canada.ca/our-natural-resources/minerals-mining/explosives-fireworks-and-ammunition/fireworks-and-pyrotechnics/fireworks-operator-certification/fireworks-operator-certification/9885

[10] Fireworks operator certification (canada.ca), Accessed June 13, 2023, https://natural-resources.canada.ca/our-natural-resources/minerals-mining/explosives-fireworks-and-ammunition/fireworks-and-pyrotechnics/fireworks-operator-certification/fireworks-operator-certification/9885?_gl=1%2A8ezz6r%2A_ga%2AMTA1MzE3NTU4MC4xNjg2NjUwMjM5%2A_ga_C2N57Y7DX5%2AMTY4NjY1MDIzOC4xLjEuMTY4NjY1MDc0OC4wLjAuMA..

- The by-law should include the importance of fire safety while setting off fireworks. Therefore, it would also be appropriate to have safety information on the proper method of setting off fireworks and the equipment worn by those setting off consumer fireworks. Along with this document, it will also be essential to outline the need for some form of extinguishment that should be readily available such as a pail of water and a fire extinguisher or garden hose.
- In the current by-law, fireworks are only permitted on Victoria Day and Canada Day. Expand this list to include a list of holiday seasons (and locations) in which fireworks would be allowed; it should consider all religious-based celebrations and rituals, along with New Year's Eve.
- Include a requirement that all those discharging high-hazard fireworks have completed the National Fireworks Certification Program (NFCP) on discharge.
- The document should include when fireworks, such as during winds, over a pre-determined speed, should not be discharged.
- A guide on how to set off "Family Fireworks" be written, i.e., use a pail of sand to place the firework in, have a charged garden hose close by or a fire extinguisher, keep children away from the discharge area, etc.
- For discharging high-hazard ordinances, the HKFES should conduct a pre-event inspection of the site to ensure it complies with the application by a member of HKFES that has completed the NFCP course.
- Include in the by-law that a fire apparatus with four firefighters stands by at the site of high-hazard firework displays.
- There should be at least two post-event inspections, by a member of HKFES that has completed the NFCP course, of the area adjacent to the discharge zone to look for unexploded ordinances. One takes place the night of the display, and the second the following morning during daylight hours.
- Include pre-and post-discharge inspections and the stand-by fire crew in the Consolidated Fees By-Law.

Note: *More and more, communities and their Fire Chiefs are recommending prohibiting the sale and use of ALL "consumer" fireworks. This prohibition is due to the dangers associated with consumer fireworks. Enforcement is key; few municipalities have by-law enforcement officers working when these are most problematic – late evenings and weekends.*

Open-Air Burning By-Law 2017-12

The Open-Air Burning By-Law stipulates the parameters for outdoor burning within Huron-Kinloss, which came into effect in 2017. This by-law is six years old and should be reviewed and updated in preparation for presentation to Council for consideration.

Consider the following for inclusion in the revised by-law:

- The amended by-law should reference the OFC Article 2.4.4.4.
- The by-law should reference O. Reg 256/14, amendments to the FPPA.
- By-Law should reference O. Reg. 207/96, Outdoor Fires, from the Forest Fires Prevention Act.
- Include in the by-law the use of wood-burning outdoor furnaces, which are becoming quite popular.
- By-Law must include approved manufactured burning appliances with spark arrestors, as found in Chimineas.
- It should also state that manufactured appliances cannot be placed and used on wooden surfaces such as decks and porches.

Community Risk Reduction Planning

With the CRA completed and all risks identified, developing a CRRP begins. When correctly applied, the CRRP 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 CRRP.

Aside from the primary benefits to the community, a CRRP can positively impact the fire department. The CRRP improves emergency responder occupational health and safety, reducing line-of-duty deaths by increasing the awareness level of risks within the community.

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

- 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 and the CRA and CRRP work to identify the changes and any topics that may need to be addressed such as “older and wiser” programs.
- High-risk residents tend to remain underserved and the CRRP can identify these underserved areas.
- 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.

There are several steps in developing a CRRP, 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, identifying the various community risks and the priorities determined, 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 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 included are:

- *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 Policies (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, 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 CRRP 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 CRRP 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 CRRP 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 CRRP. In its development, the plan has identified the risks of the fire department while mapping out a direction for the reduction or mitigation of risks through programs and outcomes that are or need establishment.

Having completed the Fire & Emergency Services Strategy Plan and the CRA, the Fire Chief will have the information available to make informed decisions on how best to develop and deploy the CRRP.

SECTION 2

Profile, Risk, and Preferred Treatment Options

SECTION 2 – 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 of the mandatory profiles, please refer to the appendix for each of the profiles.

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 risks. 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 Fire Code inspection and enforcement program to ensure Fire Code 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 building

complies with the Fire Code. 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 motor vehicle collisions (MVCs). Fire departments accept that MVCs will happen and that the fire department 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 may enter into a Fire Protection Agreement with a neighbouring community for service providers to address some or all the Three Lines of Defence. Transferring the risk means the fire department transfers the risk's impact and management to another organization or body. Contracting public fire safety education, Fire Code inspection and enforcement, or emergency response services to a neighbouring municipality or another organization are examples of transferring the management of risks to another body.

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 risk, 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, Fire Code 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.*

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
Geographic Profile	Body of water, including, rivers, streams, and wetlands *Body of Water Impacts Training, Equipment, Response Time Recreational/Tourist Activities*	**Risks –** There is a history of flooding, primarily in Lucknow and western areas along Lake Huron. Roads may become impassable, and property may be damaged. The public's knowledge of the dangers of bodies of water and where they are when an emergency arises may be limited. HKFES provides shore-based ice-water rescues to the awareness level of training. *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • HKFES 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 train to the operations level for ice rescues with crews leaving shore utilizing an inflatable raft and tethered to a maximum of 305 m (1,000 ft) from the shoreline. • Ensure all federal and provincial laws and regulations relating to water rescues are followed, including levels of training. Recreational/ Tourist Activities • Install signage at key locations of bodies of water identifying the risks of water bodies and thin ice. • Have pamphlets available at lodging locations warning of the dangers of thin ice and how a person may self-rescue. • List items persons should carry for self-rescue, including a personal flotation device, ice picks, throw rope, a whistle or loud horn, and cellphones in a waterproof kit.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• Review the need for enhancements in the number of social media platforms HKFES uses in providing fire safety messaging. • Enter into a response agreement with a neighbouring fire service that provides operations level ice/water rescue, including responding with an inflatable raft or vessel. Flooding • The most significant risk of flooding is in the Lucknow area. • Monitor water level reports from the Saugeen Valley and Maitland Valley Conservation Authorities, 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 any evacuations of residents. • HKFES should conduct a needs analysis to upgrade their level of response to operations, including adherence to NFPA 1006: Technical Rescue Standard regarding floodwater rescues.
	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. The conversation may include the following: ○ Install back-flow valves on septic lines and ensure that sump pumps are operational.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		○ In cooperation with other departments of the Township, there is a role for the fire department to build and maintain a resilient community, especially as it relates to overland flooding.
	Oil/Gas Wells	**Risks –** The seven identified oil and gas wells in the Township are inactive and abandoned. There are no active wells in the Township, but they pose a risk of latent explosions or may not be appropriately sealed. The HKFES should be made aware of these and possible response requirements. Several hazards exist with oil and gas wells, which include:[11] ○ Leakage of the well, which could be identified by soil staining or dead vegetation. ○ Hydrogen sulphide may escape from a leaking well. *Treatment Options* **Avoid and Mitigate Risk -** This may be achieved by: • HKFES must ensure that SOGs, policies and training are in place for responses to oil/gas well emergencies in which persons are trapped. • Ensure maps of the well locations are available, whether active or not. This information is available at: ○ https://geohub.lio.gov.on.ca/datasets/lio::petroleum-well/explore?location=42.284364%2C-82.667605%2C11.00 • Ensure there is a section in the ERP that addresses oil/gas well emergencies and complete training on these types of emergencies.

[11] Oil and gas | ontario.ca, Accessed May 9, 2023, https://www.ontario.ca/page/oil-and-gas

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		○ The Township could reference the *Oil, Gas and Salt Resources Act*, R.S.O. 1990, for additional material. • Building Division needs to be aware of the locations of wells to ensure no structures are over them. • Monitor the investigation findings into the explosion of an inactive well in Wheatley, ON.
	Railways	No rail lines are in operation in the Township of Huron-Kinloss.
	Provincial Highways, County, Municipal *Electric Vehicles* *Road Closures* *HAZMAT Incidents*	**Risks –** By February 2022, 75,274 electric vehicles were registered in Ontario[13]. By 2030, one out of every three vehicles sold will be electric. 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 these cars catch fire. Firefighters are also at risk of electric shock from damaged lithium batteries when handling electric vehicles that catch fire. Firefighters must ensure the vehicle is de-energized during an extrication incident to prevent electrical shock if electrical cabling becomes compromised by accident. Other notables include: • An electric vehicle fire could take up to 40 times more water to extinguish than a conventional gas-powered vehicle.[15]

[13] Ontario Making it Easier to Access Electric Vehicle Chargers, (Ontario.ca), Accessed June 17, 2023, https://news.ontario.ca/en/release/1001827/ontario-making-it-easier-to-access-electric-vehicle-chargers

[15] Firefighters have to blast 40 times more water at burning Tesla than other cars – The Hill, Accessed July 2, 2023, https://thehill.com/changing-america/enrichment/arts-culture/568255-firefighters-have-to-blast-40-times-more-water-at/

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• Lithium batteries, have been known to ignite hours after being involved in an MVC. • Foam is not an excellent extinguishing agent as it will have difficulty entering a water-tight, fire-resistant box. • Batteries are not made of solid lithium, making Class D fire extinguishers ineffective. The powder from the extinguisher cannot enter the box where the failed cell(s) are. • Pancake nozzles are new on the market and are relatively ineffective as there are no means of spraying water inside the box. The water sprayed will only cool the outside of the box and not contact the failing cells. • Piercing nozzles should never be used to penetrate the box due to the electrocution risk. Roads Closures Roads are often closed for Roads Department staff to execute repairs, construction projects, possible MVCs, weather events, etc. HAZMAT Incidents MVCs involving transport trucks carrying HAZMAT can be highly complex. The HKFES can mitigate some HAZMAT calls as personnel train at the operations level but must remember they are permitted to respond at the awareness level. *Treatment Options* Avoid and Mitigate – This may be achieved by: Electric Vehicles • HKFES should consider taking the NFPA online training course Alternative Fuel Vehicles Training Program for Emergency Responders. • Download electrical vehicle information apps on

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		the Department's tablets/phones/laptops. • HKFES needs to source training courses and acquire specialized equipment for fighting fires in electric vehicles. • HKFES must ensure that all SOGs, procedures, and training are current when responding to electric vehicle emergencies. Road Closures • Public Works should notify the HKFES and Tillsonburg Fire & Rescue Services, HKFES's dispatch centre, of all closures. The message should include the reason(s) the road is closed, its anticipated duration, and possibly alternate travel routes available. • When the road reopens, the Roads Department should again call HKFES and Tillsonburg Fire & Rescue Services to advise members that the road has reopened. • When installing new traffic control systems, include pre-emptive signal control systems. Upgrade the traffic control light in Lucknow to have control devices and sensors. HAZMAT Incidents • As with any HAZMAT incident, the Township may need to implement its ERP or open its reception centres. • Ensure MECG members are trained and familiar with HAZMAT incidents and familiar with their responsibilities during the emergency. • The HKFES may call for the Provincial HAZMAT team from Windsor Fire & Rescue Services to address and reduce complex HAZMAT incidents.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
Building Stock Profile	Fires	**Risks –** Fires can be due to design, construction, maintenance deficiencies, human error, or mechanical/ electrical failures. *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. • Discuss the misuse of ignition sources, such as candles, related safety practices, and possible evacuation protocols.
	Township of Huron-Kinloss *Single Family Dwelling* *Lightweight Truss Construction* *Dwelling, Accessory Secondary Unit, Garden Suites, and Short-Term Rentals -* *Possible Illegal Units* *WETT Inspections*	**Risks –** Single Family Dwelling This occupancy experiences the most fires in the Township of Huron-Kinloss, with 28 residential fires between 2017 and 2022. In 2021, the estimated dollar loss was over $1.2 million. Most fire fatalities occur in residential fires. HKFES has not promoted the use of residential fire sprinklers and how may lessen the risks when a fire occurs. New home purchasers need to be mindful of the importance of sprinklers as a fire safety feature and the savings available in their insurance. Lightweight Construction Roof truss failures have killed many civilians and firefighters. Metal studs in the walls are also considered LWC.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		Dwelling, Accessory Secondary Unit, Garden Suites, and Short-Term Rentals (STR) An unknown number of illegal rental suites could be operational in the Township. The Zoning By-Law 2018-98 allows for *Dwelling, Accessory Secondary Unit* and garden suites. One requirement of having a garden suite is that it shall remain portable. There is no by-law governing the operation of short-term rentals, including their registration, licencing, and building/ fire inspections. It is becoming a challenge to control the operation and location of short-term rentals. Historically, the municipality has not required STRs to operate in only specific areas. The infrastructure in built-up areas with higher numbers of STRs will see higher demands during peak STR season. Wood Energy Technical Transfer 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. Chimney fires result from poor maintenance, such as annual cleaning. Neither HKFES nor the Building Department has yet to conduct WETT inspections. At present, the Township advises those requiring these inspections to look for a qualified third party to complete them. They are not forecasting that they will do so unless a full-time FPO is employed. The revenue generated from the licensing and inspection has the potential to neutralize the cost of hiring a full-time FPO. *Treatment Options* Avoid and Mitigate Risk – The risk of fires occurring may be reduced by:

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		Single Family Dwellings • Provide public fire safety education on smoke alarms beginning with school children. Promote the need for students to have their parents complete smoke alarm testing. • Encourage the installation of residential sprinklers in the planning phase of new developments. Fire Prevention Division could work with the developer/builder in promoting their value as an "add-on" in new home construction. Dwelling, Accessory Secondary Unit, Garden Suites, and Short-Term Rentals • The Township should develop and enact a by-law regulating Dwelling, Accessory Secondary Unit and garden suites, requiring their registration and license to operate with the municipality as well as a mandatory inspection by the building and fire departments. • HKFES should know the location of all Dwelling, Accessory Secondary Unit, along with short-term accommodations for inspection purposes. • Establish a means of reporting possible illegal accommodations. • Add the Dwelling, Accessory Secondary Unit and garden suites inspection and short-term accommodations to the fees and charges by-law. • Consider requiring any accommodations with a wood-burning appliance to complete a WETT inspection. WETT Inspections • The Township 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. The building department should include the condition that a WETT inspection is

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		completed during the installation to determine compliance with the inspection. Insurance companies often require these to be completed when buying a residential structure equipped with a wood-burning appliance. • Discussions with the Township's insurance provider should review possible liability exposures when requiring WETT inspections. • WETT inspections still need to be completed by the Township, and HKFES could assume the inspections if a full-time FPO is in place. Hiring a third party responsible for these specialized inspections would also be viable. • Whether a third party or Township staff completes a WETT inspection, a fixed fee becomes established, which the Township includes in its Consolidated Fees By-law. Lightweight Construction • The OFM has mandated through Fire Marshal's Directive 2022-001 that municipalities must inventory all building stock. The focus shall include identifying all those incorporating some LWC techniques. • The Township of Huron-Kinloss must comply with the Fire Marshal's Directive or face a fine. • 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. This allows the HKFES Incident Commander to be aware of the dangers of such construction practices while completing their initial size-up of any fire incidents. • There should be enhancements to firefighter training on building construction which identifies structures that may have LWC and the associated risks to early collapse of these building components.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
	Larger and Higher Structures *Response Protocols and Training*	**Risks -** A fire occurring in a higher structure could strain fire service resources. The OBC permits structures up to six floors built using ordinary wood construction materials. These construction changes limit firefighters' effectiveness in containing the fire to the apartment of origin. In designs made of wood construction, a fire could spread rapidly and be difficult to manage. Including LWC components will increase the risk for firefighters. HKFES does not own an aerial device. According to the Zoning By-Law, the maximum height of a building in the Township is 16 m (52.5') or approximately five storeys. *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • Additional staffing, equipment, and training may be required. • OBC requires structures over four levels to be sprinklered. Sprinkler systems should be part of the fire prevention inspections and pre-planning by the fire department. • During the planning stages of any new multi-unit residential buildings, review the benefits of installing sprinklers, no matter the structure's height. • Ensure SOGs, policies, equipment, and high-rise training are in place to fight fires in higher structures. • Complete and/or update pre-incident plans for all high-rises. • Encourage the installation of bi-directional radio antennas in all new high rises. This enhancement may require council to approve a by-law requiring these antennas. This requirement is due to restricted radio communications in facilities that have used high amounts of steel and concrete in

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		their construction. • Enter a response agreement with Kincardine Fire & Emergency Services for their aerial to respond to fires in HKFES jurisdiction. Technically, requesting an aerial under mutual aid is inappropriate, as mutual aid is to be reciprocal. With HKFES not having an aerial, they cannot reciprocate such requests.
	Fuel Retail Outlets *Gasoline, Diesel*	**Risks -** A large fuel spill is a HAZMAT incident. There is one retail outlet in Ripley and one in Ashfield-Colborne-Wawanosh with bulk fuel stored on-site in large quantities for client delivery. Marinas that have fuel storage on site could create an environmental hazard if a leak were to occur within the waterways. The risk of fires exists with high fire loads on site (i.e., boats, fuel, and retail outlets). *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • Inventory of all locations that provide mobile fuel delivery service and have bulk fuel storage onsite. • Contact TSSA for a list of sites with non-retail fuel tanks greater than 909 liters (200 imp gallons). • Complete pre-incident plans for each mobile fuel delivery service facility with fuel storage. • Provide training on fighting flammable liquid fires, including the use of foam. • Ensure containment booms and absorbent pads are available for spills and leaks into waterways.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
	Huron-Kinloss Fire & Emergency Services *Inspections and Enforcement* *Plans Examination* *Fire Safety Plans* *Historic Buildings* *Downtown Core(s)* *Seasonal Campgrounds* *Smoke and CO Alarms*	**Risks -** Currently, the HKFES does not conduct fire inspections based on either NFPA 1730 or the FUS recommended schedule, as it is difficult to achieve with the current staffing level. The Fire Chief acts as the FPO/PFLSE. HKFES is involved in the plans examination process to ensure 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. Historic Buildings Historical buildings within older areas of the Township may be of heavy timber construction, thereby providing a higher fire load in the event of a fire. Inspections of heritage buildings are often missed and should be completed annually due to their age and community significance. Any that fall in this occupancy should be a priority each year due to their historical significance. Downtown Core • Conduct annual inspections. Utilize the frequency charts noted in NFPA 1730 or FUS as a guideline. • Work with local business groups in promoting fire safety messaging. Seasonal Campgrounds Five seasonal campgrounds in the Township 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. • No working CO and smoke alarms

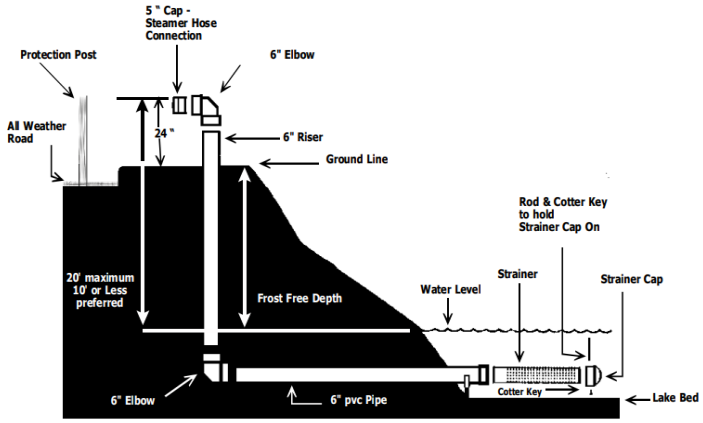
Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• Many campers use propane for cookstoves or heating purposes. These tanks may pose a risk if a leak is present. Smoke and CO Alarms Far too many fatalities in the province result from missing or inoperable smoke and CO alarms. 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 CO alarms have a life span of seven years. *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 work towards compliance with either FUS or NFPA 1730 frequency schedules. The current staffing levels in fire prevention prohibit HKFES from achieving this goal. • Maintain frequency of fire inspections of high-risk and vulnerable sector occupancies per Fire Marshal's Directive 2014-002 (revised April 27, 2022).

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• Ensure enforcement of the OFC. Successful convictions for fire code violations that include significant fines should be publicized in the media while keeping those involved anonymous. HKFES has the resources to participate in Part 3/code enforcement and relies on other means to mitigate violations. • Staff of the facility may not understand their role in the event of a fire alarm or the location of the building's fire panel. This deficiency is a training issue for those in the care and control of buildings. Historic Buildings • Educate the building owner(s) and staff on fire prevention and safety. • 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 make vacant structures safe and secure. • Complete a Pre-Incident Plan for each location. Downtown Core • Conduct annual inspections. Utilize the frequency charts noted in NFPA 1730 or FUS as a guideline. • Work with local business groups in promoting fire safety messaging.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		Seasonal Campgrounds • HKFES has an inventory of the number of campgrounds/parks within the Township. The list should include staffing levels, the number of guests, risks, and particular features or concerns as well as a list of locations requiring annual inspections and public safety, etc. • Campgrounds must ensure accessible roadways for emergency personnel. • 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 CO alarms, safety when changing LPG tanks, etc. • Train seasonal staff on fire safety, fire extinguisher use, etc. • HKFES should adapt its Wildland Interface Fire Prevention and Response Plan to include campgrounds operating in or near forested areas. Smoke and CO Alarms • Enhancements in public education that promote the necessity for working smoke/CO alarms, establishing escape routes, using fire extinguishers, and installing residential fire sprinklers. • Remind the public to ensure their alarms are functioning. • Initiate a zero-tolerance policy at locations with a record of lacking smoke and CO 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.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• The Township could require installing residential fire sprinklers in certain circumstances. The decision requiring fire sprinklers may be made on any one of the following: o lack of a water source close by o access to the properties, such as dead-end roads o distance from a fire station o value of the building constructed • Work with merchants to begin supplying smoke alarms with a lifetime battery. This would help reduce the incidents of battery removals or dead batteries. • HKFES carries smoke and CO alarms on its apparatus to ensure one is in place and operational before departing a residential occupancy.
	Properties with Solar Photovoltaic Systems	**Risks -** There are locations in the Township where solar photovoltaic systems panels are installed either on top of roofs or at ground level. These panels produce high voltage, which must be disconnected. Fire in structures with solar panels on a roof has a higher potential of early roof failure due to the extra weight load. The Township Building and Planning Services department requires a building permit when installing solar equipment. *Treatment Options* **Avoid and Mitigate Risk –** This may be achieved by: • Ensure identification and documentation of locations with solar equipment. • HKFES 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.

Mandatory Profiles	Top Risk or Issues & Concerns	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, six vulnerable occupancies, defined in the OBC or Municipal Property Assessment Corporation (MPAC) classifications, are in the Township. *Treatment Options* **Avoid Risk** – This may be achieved by: • Provide public education on escape planning. • Train personnel 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. • HKFES 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.
Critical Infrastructure Profile	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. *Treatment Options* **Accept Risk** – This may be achieved by: • The Township should promote the advantages of an automatic standby generator to community residents as part of their emergency planning. • Ensure all fire stations and community facilities have the capacity or any restrictions to having standby generators installed that energize the entire building. • Use social media platforms to advocate for safe operating procedures of generators.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• Work with the Electrical Safety Authority (ESA) on the proper installation procedures.
	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. Domestic Water Supply Wet Hydrants The Township of Huron-Kinloss has over 300 municipal hydrants and three private hydrants. A hydrant's failure could become a life safety risk under fire conditions. Dry Hydrants and Cisterns Dry hydrants are commonly used by firefighters as the main water supply in rural areas where the municipal water system is a luxury and can't be easily accessible. Typically, an unpressured, permanently installed pipe, the dry hydrant is well below the water level of a lake or pond at one end, usually with a strainer to prevent debris or foreign objects from entering the pipe. 

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		The Township lacks dry hydrants for HKFES's water supply in rural areas not serviced with wet hydrants. The one in service is attached to the cistern available for the department's use, and that is at the school in Ripley. To what degree the cistern is compliant with NFPA 22 is unknown. Dry hydrants and cisterns are in rural settings for fire protection. The installation and maintenance of dry hydrants and cisterns are under NFPA 22 *Standard for Water Tanks for Private Fire Protection* and NFPA 1142, *Standard on Water Supplies for Suburban and Rural Firefighting. In Ontario, the maintenance of h*ydrants must be per the OFC's *Part 6, Fire Protection Equipment*. Within FUS's *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": Commercial Lines for Public Fire Protection Classification (PFPC) 5 km by road of first responding pumper AND mobile water supply apparatus AND 2.5 km (1.6 miles) by road of an approved water supply point Personal Lines, Dwelling Protection Grade 8 km (5 miles) by road of first responding pumper AND mobile water supply apparatus: AND 5 km (3.1 miles) by road of an approved water source.

Mandatory Profiles	Top Risk or Issues & Concerns	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 to $35,000, but the insured may save approximately $20,000 in insurance costs. Rural Water Supply The HKFES has not achieved their Superior Tanker Shuttle Certification, which meets FUS requirements. Having this accreditation would assist in lowering insurance premiums for those living outside the built-up areas. *Treatment Options* Mitigate Risk – This may be achieved by: Hydrants • Some areas of the Township of Huron-Kinloss are serviced by 100 mm (4 inch) watermains. Increase the minimum size of the water mains from the current 100 mm (4") in un-serviced fire-protected areas to 150 mm (6") or greater which in Ontario states: *For distribution systems designed to provide fire protection, the minimum diameter of watermains shall be 150 mm except beyond the last hydrant on cul-de-sacs where the minimum diameter of watermains may be 25 mm.* [16]and install fire hydrants to ensure adequate water supply for firefighting operations while continuing to provide domestic water.

[16] Watermain Design Criteria for Future Alterations Authorized Under a Drinking Water Works Permit | ontario.ca, Accessed June 7, 2024, https://www.ontario.ca/page/watermain-design-criteria-future-alterations-authorized-under-drinking-water-works-permit#:~:text=4.1%20For%20distribution%20systems%20designed%20to%20provide%20fire,minimum%20diameter%20of%20watermains%20shall%20be%2075%20mm.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		○ This will enhance the constant supply during firefighting operations, water pressure, and volume of water available which could lead to additional building construction as supply meets the demand. • Installing hydrants may lower insurance rates. • Water flow from hydrants should meet FUS Water Supply for Public Fire Protection guide. • Maintenance of hydrants should comply with the OFC, Article 6.6.4 and NFPA 291. • Identify all hydrants with a four-digit number, with the first number identifying the area of its location (i.e., Lucknow, Lakeshore, Ripley or Whitechurch). • Follow up with the owners of private hydrants to ensure they understand their responsibilities per OFC and NFPA 291. • The Township should consider offering testing and repair services for private hydrants for which the owner is invoiced as a form of revenue generation while ensuring the hydrants are operational. • Convert all hydrants with threaded steamer ports to Storz lug connections. Dry Hydrants and Cisterns • HKFES should complete an analysis to determine the need for and locations of dry hydrants installations. • Once dry hydrants are in place, develop GIS maps identifying their locations, with circles determining the response distances, which 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. • Promote installing dry hydrants to property owners with access to a water supply (i.e., ponds or water reservoirs).

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• 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 • The HKFES should explore the opportunity of achieving its Superior Tanker Shuttle Accreditation for the department. ○ If deemed beneficial, HKFES must plan for and train to achieve its Superior Tanker Shuttle Accreditation to include every station.
	Fire Stations *Standby Generators*	**Risks –** As an emergency services facility, the loss of power at any fire station could negatively affect the response capabilities of the HKFES. HKFES fire stations have generators that supply power to the entire building. *Treatment Options* **Avoid and Mitigate Risks** – This may be achieved by: • Ensure standby generators installed at all the fire stations maintain their ability to energize the entire building. • Reliability is an essential aspect of operating a generator. Arranging servicing per the manufacturer's specifications, including the completion frequency, will reduce the risk of the unit's failure.
	Township of Huron-Kinloss and the Huron-Kinloss Fire & Emergency Services *Radio System and Infrastructure*	**Risks –** While the radio coverage throughout the Township sits at 95%, there is a risk of a radio system failure and power loss. In 2021, the Township upgraded the radio system. There are two transmission towers across the Township, each with a generator for backup power.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		A radio audit identifies deficiencies and recommends enhancements to improve radio communications. It may be an opportune time for the Township to complete one primarily since Motorola no longer supports some radio technologies after 2024. The system operates using analogue technologies with repeaters. Digital is a stronger signal than analogue as radio signals lose strength with distance; digital signals are at a consistent power output level. A reliable radio system is imperative for the health and safety of firefighters. The increase in intensified high-rise structures with large amounts of concrete and steel construction will impede radio signals. HKFES should review the need to add more mobile repeaters in some apparatus to enhance radio coverage. *Treatment Options* Avoid and Mitigate Risks – This may be achieved by: • When it comes time to replace portable radios, consider purchasing intrinsically safe models from now on. This will provide an even safer work environment for the firefighters.
	Telecommunications	**Risks –** The loss of telecommunications may adversely affect commerce in the Township. The infrastructure includes landlines and cell phone coverage throughout the region. *Treatment Options* **Accept Risk –** This may be achieved by: • The Township should work with telecommunication companies to explore opportunities for improved coverage and maintain continuous operation.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
	Natural Gas Liquified Petroleum Gases (LPG) *Propane*	Risks – Natural Gas 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. Some pumping stations may inject Mercaptan into the product as the gas flows through the pipeline. 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 heat during the colder months. There is a risk of leaks going undetected and creating an explosion. There is one Level I and one Level II outlet in the Ashfield-Colborne-Wawanosh Township. Both are at the same address in Lucknow. The Level II tank contains 227,124.707 litres (60,000 United States Water Gallons (USWG)of LPG. *Treatment Options* Accept Risk – This may be achieved by: Natural Gas • Work with local service authorities concerning public education/notification initiatives during disruptions. • HKFES must complete pre-incident plans for all-natural gas pumping stations or above-ground infrastructure. Propane • Provide public education on transporting, storing LPG tanks, and connecting hose lines. • Promote safe barbeque and portable stove usage to prevent leaks and fires involving propane tanks.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• Contact TSSA for all locations with installed consumer LPG tanks.
Demographic Profile	Public Education	**Risks -** The HKFES needs more Public Education Programs. The lack of time for an effective program hinders progress in fire safety messaging. The Fire Chief is responsible for delivering Public Education Programs and is NFPA 1035 Certified. HKFES' current efforts included: • School class visits • Attended fall fairs • Promoted fire prevention week • Social media posts *Treatment Options* **Avoid and Mitigate Risk –** This may be achieved by: • A part-time dedicated PFLSE would greatly assist HKFES. Public education opportunities require completion as the first line of defence. Public education programs need to meet the needs of the Township as, presently, there is no dedicated PFLSE. • Many areas of public education could be enhanced or implemented if additional resources were available in the form of a part-time dedicated PFLSE. • Consider hiring a full-time PFLSE in cooperation with a neighbouring fire department, whereby the individual dedicates certain days of the week to each employer.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
	General Population *Growth between 2021 and 2046* *Senior Citizens* *Visible Minority Populous* *Youth* *Juvenile fire setters* *Documenting Public Education Events* *Indigenous Communities*	Risks – General Population Ontario growth projections for Bruce County indicate a growth rate of 25% to 40% between 2021 and 2046.[17] In 2021, 1,465 children aged 0 to 14 were in the Township, representing 19.0% of the total population. The working-age population between 15 and 64 represented 55.9% of the total population. In 2021, 1,935 persons aged 65 and over were in the township, representing 25.0% of the total population.[18] Seniors The senior demographic should receive fire safety messaging, which has been somewhat limited for various reasons. Namely, the Fire Chief is also HKFES's PFLSE with little time for public education. HKFES requires a dedicated PFLSE, as the Fire Chief is too busy with other duties as chief to provide public education to this demographic on an ongoing basis. Between 2021 and 2046, the senior population in Bruce County will grow between 35% and 50%. Estimates indicate that by 2046, 22% and 27% of the people living in Bruce County will be seniors.[19]

[17] Ontario population projections, Accessed June 7, 2023, https://www.ontario.ca/page/ontario-population-projections#:~:text=Ontario%27s%20population%20is%20projected%20to%20increase%20by%2035.8,Ontario%27s%20population%20has%20been%20affected%20by%20the%20COVID-19

[18] Focus on Geography Series, 2021 Census - Huron-Kinloss (Census subdivision) (statcan.gc.ca), Accessed June 5, 2023, https://www12.statcan.gc.ca/census-recensement/2021/as-sa/fogs-spg/Page.cfm?lang=e&topic=2&dguid=2021A00053541015

[19] Ontario population projections, Accessed December 20, 2022, https://www.ontario.ca/page/ontario-population-projections#:~:text=Ontario%27s%20population%20is%20projected%20to%20increase%20by%2035.8,Ontario%27s%20population%20has%20been%20affected%20by%20the%20COVID-19

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		Visible Minorities Based on the 2021 census, there are 105 visible minorities living in the Township. 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. Youth and The Arson Prevention Program for Children (TAPP-C) A youth who created fires may need to attend a Juvenile Fire Setter Intervention/ The Arson Prevention Program for Children (TAPP-C). This program includes the involvement of family members and could consist of other community partners. This program should continue as an active program within HKFES and, in time, become the responsibility of the dedicated PFLSE once they are in place. Understanding the risk of youth fire starters is difficult to ascertain due to confidentiality unless the fire department attended and aware through the origin and cause investigation. Families with youth that play with smoker's articles may reach out to HKFES for guidance. Documenting Events The OFM has provided a means of documenting public education events. While HKFES documents their functions in the FirePro record management program, the OFM program is available if required Indigenous Community In 2021, there were 125 Indigenous members in the community. HKFES has not previously contacted the leaders of this demographic. Indigenous members should not miss receiving culturally specific fire safety

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		messaging as this group has a higher fire-related fatality rate.[20] This group may contact HKFES to permit a sacred fire to take place. The fire identifies the beginning of a sacred ceremony, event, or ritual. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: General Population • An increase in population, as well as an increase in residential buildings, will bring an increase in the number of fire calls. • HKFES will see growth in the mercantile building stock, which will need to be inspected and requires additional resources in fire prevention. • Such growth would be a suitable time for promoting the benefits of residential sprinklers during the planning stages of any new residential development. Seniors • Future public education opportunities should discuss the following topics: the sound of fire, importance of working smoke / CO alarms; emergency preparedness in the event of an evacuation, prolonged power loss, or severe weather events; safe cooking practices, dangers of using oils / grease for cooking; develop and practice an escape plan; how to extinguish a cooking fire; fall prevention; fire extinguisher operation; burn prevention; the senior's safety book; open-air burning; etc.

[20] Fire Risk for Indigenous People, written by Len Garis and Mandy Desautels for Firefighting in Canada magazine June 07, 2021, Accessed June 7, 2023, https://www.firefightingincanada.com/fire-risk-for-indigenous-people/

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• The department could enhance public education for the senior demographic by incorporating the dangers of wearing loose-fitted clothing near stovetops, especially those with open flames, into their Safe Cooking Program. Visible Minorities • The HKFES should monitor the need for pamphlets in the main languages of the visible minority community they wish to focus fire safety messaging. Where possible, distribute them through local cultural groups. • Work towards having a multi-lingual Fire Prevention and PFLSE staff that reflects the multicultural community. • Another option is the contractual employment of personnel to assist the HKFES with interpreting and delivering fire prevention messages if English is not their second language. Youth • The Fire Chief, in their role as PFLSE, has completed and obtained certification to deliver the TAPP-C program to youth. Once in place, the dedicated PFLSE should complete TAPP-C program and become certified in its delivery. Having a dedicated PFLSE allows the Fire Chief to focus on the administrative role of the department. • 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 to achieve community service hours may be available by helping around the fire station or at public education events by dressing as Sparky, the fire service mascot. Under

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		the current staffing levels, this may not be easy to achieve, but it should be considered in the future when staffing permits its implementation under the dedicated PFLSE. • Before a Junior Firefighter Program becomes active, complete a needs analysis on its value and targeted age group and community interest. Indigenous Community • HKFES develop a smoke alarm Outreach Program for the Indigenous community; it should involve local stakeholders to support their efforts. o Complete a needs analysis before implementing based on fires within the Indigenous community and increased smoke alarm calls. o Assist this group in conducting a fire-safe sacred fire.
	Public Education *Programs for Schools* *Festive Seasons*	Risks – Programs for Schools School visits by Fire Prevention are essential, promoting fire safety in the home. The HKFES delivers numerous topics to school children during the year, which include smoke alarms, home escape planning, get out and stay out, and general fire safety. The list should consist of stop-drop-roll education. They also bring a fire truck for the students to tour. The schools are to conduct fire drills as required, and the HKFES monitors these once a year. There are no formal programs for high school students as there are no high schools in the Township. 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

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		candles when residents leave the residence or forget to blow them out before retiring for bed. *Treatment Options* Avoid and Mitigate Risk – This can be achieved by: Schools • A dedicated PFLSE should promote fire safety by developing and rehearsing a Home Escape Plan, teaching children how to crawl on the floor through smoke and the dangers of playing with ignition sources. • Discuss topics that include the following: o 9-1-1 o smoke and CO alarms o safe cooking practices o Risk Watch program o Look-Listen, and Learn o change your clock – change your batteries, etc. Festive Season • Provide public education messaging on the dangers of unattended cooking, uncleaned or non-maintained chimneys, aged electrical and mechanical equipment, and lack of good housekeeping practices. • Promote artificial candles during the holiday season. • In some traditions, educate the public on the dangers of using real candles on Christmas trees or wreaths. • Provide year-round education on preventing injuries from and causing cooking-related fires.
	Huron-Kinloss Fire & Emergency Services	Risks – The province has directed municipalities and fire services to initiate a mental wellness program to educate and prevent fire department members from suffering and experiencing Post-Traumatic Stress

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
	Mental Wellness Program	Injury (PTSI). This may also be referred to as Post-Traumatic Stress Disorder (PTSD). The Township passed By-Law 2017-55, which established a PTSD Prevention Plan, and the HKFES has developed PTSI SOGs 11-5, 11-5a and 11-5b in support of the mental wellness program. Lacking in the program is the involvement of family members through educational presentations and handouts. Members of the HKFES do not have access to an Employee Assistance Program as the Township has not subscribed to one for its employees. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: • HKFES should review the values of implementing a chaplaincy program. This would provide support to families with PTSI and everyday family challenges. Many documents are available online as a reference. • The Department should conduct family nights and provide a presentation on PTSI and other mental illnesses, including recognizing the condition and the resources available. If this is unachievable, ensure that educational material is available through printed material or online for families to access. • Review and promote services available on the Crisis Services Canada website, https://talksuicide.ca/ • It would be helpful if HKFES, in cooperation with the other emergency services in the County of Bruce, developed a small information package that families could take home. • Develop a database of support agencies for the first responders and military families to call to speak with fellow first responders when needed.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		○ These groups include Boots on the Ground, which is Ontario based: 1-833-677-2668.
Hazard Profile	Weather Event/ Reception Centres *Tornadoes, Ice and Snowstorms, Extreme Heat and Cold Events, Intense Rainstorms, and Flooding.*	Risks - During a weather event or forest fire, residents, visitors, and the transient public may need a location to take refuge. The Township of Huron-Kinloss has three locations designated as reception centres. None of the centres 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. Extension cords can pose a health and safety risk (e.g., trip hazard) and need manual implementation. The reception centres have food preparation and washrooms facilities, including some showers and rooms that could become dormitories. All locations must comply with the Accessibility for Ontarians with Disabilities Act (AODA). The main hazards identified in the Township's HIRA include the following: • Blizzards and ice storms • Tornadoes • Floods (The community of Lucknow has the most significant risk) • Human health emergencies • Foreign animal disease outbreak • Energy emergencies • Water emergencies • Hazardous materials emergency at a fixed site or transportation • Explosions and fires

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• Terrorism and sabotage • Drought • A building or structural collapse of a public building • Wildland Urban Interface Fires (Lakeshore Settlement Areas) *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: • The Township arrange for the Red Cross to evaluate each location to assess its suitability as a reception centre, considering the number of residents it may need to accommodate. • Consider whether the site is suitable for long-term operations, whether there is an emergency power supply, and what amenities are available. • Ensure all sites are *AODA* compliant.
	Township of Huron-Kinloss *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, seasonal facilities, and within the family home. 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. Terrorism attacks quite often focus on those of religious faith. *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

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		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. • HKFES should have SOGs and policies for responding to locations experiencing a terrorist/active shooter attack. • Reference NFPA 3000 and Section 21 Guidance Note 6-37 Active Attacker Events for information during the development of SOGs and policies. o 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 combined thereof." o 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." • Reference materials should also include NFPA 1600 – Standard on Continuity, Emergency, and Crisis Management and the Emergency Management Standard. • The Township 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."

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
Public Safety Response Profile	Township of Huron-Kinloss and the Huron-Kinloss Fire & Emergency Services *Establishing and Regulating By-Law*	**Risks -** An Establishing & Regulating (E&R) By-Law outlines a fire department's establishment. The present E&R By-Law 2020-120 for the HKFES came into effect in November 2020, which makes it a three-year-old document. Update the document to reflect current and future fire service delivery. Further discussion of this by-law is in Section 1 of the Fire Services Strategy Plan. *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • The best practice is to annually review the by-law and revisions completed that reflect any changes in the needs and circumstances of the community. • The by-law should reference applicable NFPA Standards, Ontario Section 21 Guidance Notes, and the *Occupational Health & Safety Act (OHSA).* • The *FPPA* requires fire departments to have a smoke alarm program that should also include CO alarms. Identify expectations and outcomes of a comprehensive smoke and CO alarm program. • It should identify that Fire Prevention activities will strive to follow NFPA 1730 or FUS frequency of inspections. • Should reference the CRA being reviewed, updated annually, and renewed every five years. • The CRRP should also be mentioned, with goals and expected outcomes identified.
	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. Additionally, it is not uncommon for farmers to try and rescue animals, putting themselves at risk of severe injury or death. Community assistance can include groups such as Animal Control, law enforcement, and veterinarians.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		Treatment Options **Avoid and Mitigate Risk -** This may be achieved by: • Having emergency livestock plans in place before an incident can significantly reduce risks. • Acquire rescue equipment and develop SOGs, procedures, and training for livestock rescue and handling.
	Huron-Kinloss Fire & Emergency Services *Self-Contained Breathing Apparatus* *FIT Testing for SCBA and N-95 Masks*	**Risks –** Self-Contained Breathing Apparatus Not having safe and reliable self-contained breathing apparatus (SCBA) places the lives of firefighters at risk. The SCBA utilized by HKFES meet industry standards, including NFPA 1852, *Standard on Selection, Care and Maintenance of Open-Circuit Self-Contained Breathing Apparatus.* The HKFES has a cascade system to refill air bottles, purchased between 2003 and 2008 and will require replacement before long. Bench tests are completed annually. Section 21 Guidance Note 4-9 Respiratory Protection Program and O. Reg. 833 state that any employer using respiratory protection appliances must have an established Respiratory Protection Program, which HKFES has in place per SOG 4-9. FIT Testing HKFES conducts FIT testing to ensure that the SCBA masks properly fit the firefighter's face without any air leaking in or out of the facial seal. In 2024, HKFES participated in the joint purchase of a port-a-count FIT testing machine with two other municipalities. Testing is now completed inhouse rather than hiring a third party.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		HKFES ensures firefighters wear a proper-sized SCBA mask by issuing each firefighter a facemask. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: SCBA • Section 21 Guidance Note 4-9 Respiratory Protection Program is a good reference for what to include in the program. Also, O. Reg. 833, Control of Exposure to Biological or Chemical Agents, should be referenced and included in the program. • Testing must be per CAN/CSA Z94.4-2018 (https://view.csagroup.org/6vgztQ). *Selection, Use, And Care of Respirators* AND • ASTM F3407-20 (https://www.astm.org/Standards/F3407.htm) *Standard Test Method for Respirator Fit Capability for Negative-Pressure Half-Facepiece Particulate Respirators.* • HKFES should establish a capital reserve account to replace the 15- and 20-years old cascade system. • When completing FIT testing, include N-95 masks.
	Huron-Kinloss Fire & Emergency Services *Health and Wellness* *Exhaust Extraction*	Risks – Health and Wellness There has been a strong correlation of the development of cancer to firefighting. As such, departments must limit opportunities for cross-contamination and secondary exposure to carcinogens involved in fire scenes.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		The *Occupational Health and Safety Act* Section 21 Health & Safety Guidance Note 6-1, Hygiene and Decontamination[21], states: Employers should: *"…develop a program of decontamination, which includes engineering controls (ventilation), decontamination procedures, personal protective equipment (respiratory protection devices, gloves) and hygiene practices, in consultation with the joint health and safety committee."* The National Institute for Occupational Safety and Health (NIOSH) has identified firefighters as having a 9% higher risk of contracting cancer than the public.[22] Many fire departments are striving to issue a second set of bunker gear to each firefighter to ensure they have clean gear to wear. HKFES has two to four sets of spare bunker gear in each station. These few sets could mean some members must wear soiled gear until theirs is washed and returned. Exhaust Extraction The pollutants of vehicle exhaust have been a recognized cause of cancer. The Ministry of Labour's Section 21 Guidance Note #3-1 - Reducing Exposure to Diesel Exhaust is a good reference. Neither HKFES fire station has an exhaust extraction system installed.

[21] Ontario, "6-1 Hygiene and decontamination – Actions for employers", last modified October 21, 2019, https://www.ontario.ca/document/firefighter-guidance-notes/6-1-hygiene-and-decontamination

[22] Firefighter Cancer Rates: The Facts from NIOSH Research | Blogs | CDC, https://blogs.cdc.gov/niosh-science-blog/2017/05/10/ff-cancer-facts/, By Robert D. Daniels, May 10, 2017, Accessed June 21, 2023.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option

		Treatment Options
		
		HKFES has the post-fire decontamination of PPE in place.
		
		Firefighters are encouraged to complete the Firefighters Cancer Prevention Checklist.
		
		HKFES has installed domestic washers and dryers in the fire station for crews to wash their clothing before returning home after a fire.
		
		Avoid and Mitigate Risk – This may be achieved by:
		
		Health & Wellness
		
		• Reference Section 21 Guidance Note #3-1 - Reducing Exposure to Diesel Exhaust.
		• HKFES should review related Section 21 Guidance Notes and include items such as, but not limited to:
		  ○ Firefighter hygiene at the fire station before going home after a fire. This task should include showering, which is difficult for HKFES due to limited shower facilities and lockers for staff to store spare clothing.
		  ○ Use personal protective equipment (PPE) while handling contaminated gear/ equipment.
		  ○ Document potential exposures by completing exposure reports.
		  ○ Reduce exposure to diesel exhaust through installation of an exhaust extraction system in the fire stations.
		• HKFES should develop a formal health and wellness program that includes all aspects of health and wellness, including fitness training.
		• Develop SOGs and policies requiring firefighters to shower at the fire station after attending a fire and change into clean clothing before departing for home.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		○ This will require firefighters to carry spare clothing in their vehicle since neither station have lockers available. This initiative will also include washing their attire at the fire station. • SOGs and policies that reduce the firefighters' exposure to diesel exhaust contaminants should be reviewed and updated. • Develop an SOG and policy to encourage firefighters to participate in a cancer screening program. • Conduct information nights for firefighters and their family members, including information pamphlets. • Ensure all new fire apparatus include clean cab technologies, including dedicated compartments for transporting contaminated bunker gear. • Do not store bunker gear on the apparatus floor but in negative-pressure bunker gear storage rooms. • Develop a staggered replacement schedule for bunker gear before their ten-year end-of-life cycle so that each member is issued a second set of bunker gear. <u>Exhaust Extraction</u> • Update SOG 3-1 to ensure it is current and provides direction on reducing firefighters' exposure to diesel exhaust contaminants. Reference the Section 21 Guidance Note 3-1 *Controlling Exposure to Diesel Exhaust.*
	Huron-Kinloss Fire & Emergency Services *Fire Underwriters Survey*	**Risks –** Some insurance companies reference FUS information when establishing insurance rates for the community. A failing grade increases the risk of higher insurance rates. It is unknown when the Township had its last FUS completed. FUS examines all aspects of the Township and its fire department. An essential part of the survey is the water system and hydrant's water flow rates.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		When the FUS is completed and updated regularly using the FUS Portal, insurance rates could be adjusted in favour of the property owners, thereby finding savings. The results identify areas that need improvement, ultimately improving the Township's response and insurance ratings. The Fire Chief needs access to the FUS Portal and the documents for the Township. It could update the data as circumstances change, such as new fire stations, enhancements to water supply infrastructure, and new/additional apparatus. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: • Contact FUS and request the completion of a survey. • Access the FUS Portal to update fire department information and improvements to the Township water infrastructure.
	Huron-Kinloss Fire & Emergency Services *Apparatus Maintenance and Replacement Schedule*	Risks – HKFES has begun to follow the FUS recommended replacement schedule for fire apparatus. HKFES replaces pumpers between 15 and 20 years of age but does not replace rescues and tankers until they are 25 years. Pumpers should operate as front-line vehicles for up to 15 years and then 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. HKFES has no spare apparatus. Apparatus over 20 years old may harm insurance rates for the residents of the Township, increasing premiums.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		The trucks must be in a state of readiness and reliability; failing this may expose the Township to litigation. The maintenance of the apparatus is crucial; a Maintenance Program needs to be developed that includes annual pump testing. HKFES has no maintenance division, a third-party handles apparatus repairs. No loose equipment should be in any apparatus's driver and passenger compartments. Per NFPA 1901 and ULC S-515, HKFES must secure all ancillary equipment for safety reasons. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: • Apparatus must be replaced based on the FUS frequency chart to ensure reliability and prevention of negative impacts on insurance rates. • HKFES lacks spare apparatus; FUS recommends one spare for every eight or fewer frontline units. • Consider retaining the Fire Chief's vehicles when replaced by assigning them to stations as support vehicles to transport firefighters and equipment. • 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.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• Rescues transport firefighters and equipment to the scene. Fire services are beginning to instead 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. • If space in the fire stations permits, explore the acquisition of tankers with a tank capacity greater than 2,000 gallons (1,100 L). Many fire services are moving towards higher capacity tankers of 2,500 gallons (11,365 L) up to 3,000 gallons (13,638 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 by the stations to transport firefighters and equipment upon replacement.
	Huron-Kinloss Fire & Emergency Services *Firefighter Recruitment and Retention* *Daytime Availability* *NFPA Certifications*	Risks – Firefighter Recruitment and Retention Recruitment and Retention is a challenge, for most volunteer fire department. Not having sufficient firefighter numbers to respond to emergencies is a risk to the community and the volunteer firefighters. The Department may also see an increase in firefighters leaving the department due to the new requirements to become NFPA certified and the dedicated time it takes to complete the training. Some communities are experiencing a lack of attainable and affordable housing, which results in some firefighters leaving for this reason. Daytime Availability Having adequate personnel to respond from Monday to Friday, 8 a.m. to 5 p.m., may be challenging for

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		HKFES. Most days, a two-station response is required to provide enough firefighters to high-hazard, high-occupancy fire alarms. According to NFPA Standards, a residential structure fire that is 2,000 ft² (185.8 m²) requires 17 firefighters. Some incidents have seen six firefighters respond from a two-station response. Requesting a third station is an option under either the automatic aid agreements in place or mutual aid, but the responding staffing remains below optimal. With the need for additional firefighters, especially during daytime hours, the requirement for other firefighters should be monitored to cover any future responder shortages. HKFES may need to review the needs of the department and the advantages of having a roster of full-time firefighters. Hire full-time firefighters with a dual purpose; assist with fire inspections and public education or as an Emergency Vehicle Technician (EVT) while also responding to calls as a firefighter. Assign their work schedule to Monday to Friday during the daytime hours. NFPA Certifications Members of the HKFES have been striving to complete training to the NFPA Standards reflective of their rank/roles/activities in the department. When members meet the training requirements, they should further pursue certification. Certification is an official document that recognizes the completion of training and competency in a role. Failure to complete certification may question a member's level of competency during a legal proceeding.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option

		Members of the fire service should become certified to the NFPA Standards. Certifications recognize the completion of programs to a higher level of training and competency. The IFSAC seal is also affixed to the certificates, as that agency is responsible for certifying candidates that complete a higher education degree program related to the fire service.
		
		Treatment Options
		
		Avoid and Mitigate Risk – This may be achieved by:
		
		Firefighter Recruitment and Retention
		
		• Develop a recruitment program to be delivered by department members that encourage females and visible minorities to join the department.
		• The Fire Chief should continue to investigate opportunities to promote the retention of volunteer firefighters, such as:
		  ○ HKFES consider reimbursing the cost of acquiring and renewing Class D licenses with air brake endorsement to those members who obtain this license solely for service of the fire department.
		  ○ Provide annual performance incentives to those who attend more than the minimum percentage of training nights.
		  ○ Add annual performance incentives for those who attend more than the minimum percentages of yearly responses.
		  ○ Review the advantages of offering medical benefits to long-standing members.
		  ○ Consider offering joint contributions to an RRSP.
		  ○ 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 HKFES, so they may respond and assist their neighbours during a time of need.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• HKFES provides merit pay for those who take on other department responsibilities that they previously did not. Daytime Availability Future recruitments should focus on attracting new members with daytime availability. Those working in the municipality might be able to coordinate work with their primary employer to allow them to leave work to attend working structure fires. NFPA Certifications • Members of HKFES should complete training that meets NFPA Standards, including the certification in that discipline, to Pro Board/IFSAC criteria.
	Huron-Kinloss Fire & Emergency Services *Live-Fire Training*	Risks – Since the closure of the Ontario Fire College, fire services are scrambling to find facilities they could use to train their firefighters in live fire scenarios. Rural fire services sometimes offer derelict buildings destined for demolition to conduct training. These opportunities allow firefighters to sharpen their skill sets in many firefighting evolutions, including search and rescue, ventilation, fire attack, building construction, tanker operations, pumper operation, etc. Some fire departments have built live fire training facilities out of sea containers. These are a very economical means of setting up live fire scenarios for the community's building types. HKFES has built a training facility from 13 sea containers accessible year-round to complete live-fire training. This facility eliminates the need to use derelict buildings, which are often unsafe and may lead to firefighter injuries or deaths. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by:

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• HKFES should review opportunities to enhance its training facility, possibly creating revenue by allowing other fire departments to use the facility. • Consider a joint venture that includes public/private partnerships to offset initiation expenditures. • The Ontario Ministry of Labour's, Section 21, Guidance Note, 7-5, *Live Fire Training Considerations for Acquired Structures*, and NFPA Standards 1402 - *Standard on Facilities for Fire Training and Associated Props*, and NFPA Standards 1403 - *Standard on Live Fire Training Evolutions*, should be followed to ensure compliance. • Obtain additional mobile training props to enhance the level of training provided by the department to maintain the basic firefighting skill sets of the firefighters. • Ensure referencing NFPA 1402, *Standard on Facilities for Fire Training and Associated Props*.
	Huron-Kinloss Fire & Emergency Services *Marine Emergencies*	Risks – The Township of Huron-Kinloss is located along the eastern shoreline of Lake Huron and sees high marine traffic. The Township does not operate boat launching or slips. Permanent and transient residency is prominent along the shorelines. The two boat launches and storage facilities are operated by private enterprises. HKFES conducts ice and surface water rescues at the awareness level (i.e., shore-based) which does not include firefighters leaving the shore and travelling across the ice.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		HKFES does not operate water vessels for mitigating water rescues. The Department should complete an analysis over the coming years on acquiring a boat and whether there are public or private fundraising opportunities to purchase a craft. Due the OPP and Coast Guard vessels available seasonally, acquiring a vessel may be justified. Between 2017 and 2023 HKFES attended four water rescues. One in 2017, 2021, 2022 and 2023. If HKFES decides to obtain a motorized craft, it must comply with Transport Canada Regulations regarding commercial vessel operations. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: • Conduct a needs analysis to determine whether there is a need for conducting offshore rescues at the operations level. • Consider entering a response agreement with the Canadian Coast Guard to mitigate water rescues. • Consider a response agreement with a neighbouring fire service, like the Municipality of Kincardine, that provides ice rescues at either the operations or technician levels. • Take advantage of marine training opportunities with the OPP or Canadian Coast Guard. • Include ice and surface water rescues in the fees by-law for full cost recovery.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
	Huron-Kinloss Fire & Emergency Services *Fire Prevention Division*	**Risks –** HKFES has one FPO (also the Fire Chief) who has completed their certification to NFPA 1031 - *Standard for Professional Qualifications for Fire Inspector and Plans Examiner*. They are also certified per NFPA 1035 - *Standard for Fire and Life Safety Educators, Public Information Officer, Youth Fire Starter Intervention Specialist and Youth Fire Starter Program Manager. Professional Qualifications to Level I.* Occupancies on the compulsory inspection list from the OFM must be completed annually, including vulnerable occupancies. Other occupancies are inspected based on requests and complaints. On average, 40 inspections/year are completed, primarily on residential and assembly occupancies. HKFES needs to develop an inspection cycle based on OFC and occupancy-type requirements, such as legislated inspections of vulnerable occupancies. Based on these cycles, establish a pre-determined annual/ monthly schedule at the beginning of the year based on historical travel times, site inspection times, and any associated follow-up. The current workload prevents HKFES from meeting FUS or NFPA 1730 regarding inspection frequency. In the interim, training some firefighters to NFPA 1031, Level I will provide additional resources when required. Also, including NFPA 1035 training will support public education needs. Four to six public education events have occurred in each of the past four years. HKFES has also completed numerous publications of fire safety messages.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		HKFES needs to analyze the current demands of fire prevention inspections and evaluate whether to employ a full-time FPO/PFLSE to aid in completing the inspections. The present and anticipated growth in building stock will reflect on the division's workload. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: • HKFES needs to review the goals and overall outcomes that fire prevention wishes to achieve. • A review includes changing the name of the Fire Prevention Division to better identify fire prevention activities. • HKFES hire a full-time FPO/PFLSE. This individual should also respond to fire calls while on duty.
	Huron-Kinloss Fire & Emergency Services *Standard Operating Guidelines/ Policies*	Risks - Fire department policies and guidelines have enormous value for a department. The backbone of any fire service is its policies, SOPs, and SOGs, which govern and provide direction on its operations. Not having up to date policies and guidelines can present a risk to the firefighters and possible liability to the Township. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: • If time does not permit the Fire Chief to address the SOGs, HKFES should consider hiring a third party to review, update current SOGs, and develop new SOGs as required. • Ensure all SOGs are relevant to HKFES's operations and align with the E&R By-Law. They should be available online to all department members. • Ensure IT support is in place to support the electronically available SOGs. Doing so will eliminate the need for hard copies in the stations, as maintaining that approach is problematic.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• Ensure wording allows flexibility to account for good judgment under the circumstances that may be present. • A source of information for reference is in Section 21 Guidance Notes that are kept current by a provincial team of fire service personnel. An excellent regiment to adhere to is to have an SOG and policy in place for each Section 21 Guidance Note. • Reference NFPA Standards, where applicable. • For a fire department to operate safely and efficiently, all members must understand and adhere to all policies, SOGs, and SOPs. Those that fail to do so should be held accountable. • To ensure all the SOGs are current, the Fire Chief should regularly review and revise existing policies and SOGs and develop new policies and SOGs where required. Some fire departments review a third of the SOGs annually to update the documents every three years.
	Huron-Kinloss Fire & Emergency Services *Technical Rescue Response Capabilities* *Tiered Medical Responses.* *Land Ambulance Agreement*	Risks – Technical Rescue Response Capabilities HKFES currently does not mitigate technical rescues such as trench and confined space. Firefighters must train to the awareness level for all technical rescue responses per the Section 21 Guidance Notes and NFPA 1006 and 1670. They should not participate in rescue situations above that level. Due to the small number of times the HKFES gets called to attend a technical rescue, it would not be fiscally responsible for training and purchasing the required equipment to respond at the operations level. Of all the types of technical rescues, ice/water would be the main one that HKFES could consider moving to a higher level of response due to the number and size of bodies of water in the area.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		Tiered Medical Calls The HKFES responds to many medical calls to aid residents and visitors during a medical episode. Unlike many other communities, some risk losing their lives from medical emergencies. The HKFES responds to tiered medical calls under the current agreement enacted in 2020. A review of the contract can occur upon request by any participating municipality. The Council formalized the tiered response agreement through By-laws 2020-73 and 2020-74. HKFES firefighters have been trained on and permitted to administer naloxone to patients with opioid overdose. Fire departments have expanded their list of drugs to include epinephrine (Epi-pen), glucose gel for diabetic emergencies and acetylsalicylic acid 81 mg for cardiac emergencies. HKFES has not considered expanding the list of drugs firefighters can administer. Land Ambulance Agreement Persons suffering from smoke inhalation may suffer significant breathing impairment. Contaminants enter the bloodstream, requiring immediate intervention to prevent irreversible damage. The fire services of the County of Bruce need to lobby the County to implement a higher level of service provision, similar to Essex-Windsor, to victims of smoke inhalation. In 2016, fire services in the Essex-Windsor area agreed to participate in a unique agreement with the Windsor Regional Hospital. The agreement outlines how EWEMS' District Chiefs will carry cyanide antidote kits to treat smoke inhalation before transporting the patient to a local medical facility for further treatment.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		Treatment Options Avoid and Mitigate Risk – This may be achieved by: Technical Rescue Response Capabilities • Complete an assessment on whether arrangements for the firefighters to train to the TSSA standards for elevator rescues are required. At the same time give consideration to training on confined space rescue to the operations level as a minimum. ○ If the risk warrants training to remain at the awareness level, ensure a mitigation strategy is in place for the proper level of response. • HKFES should analyze the necessity of entering into a response agreement with another fire department responding to technical rescues at the operations or technician levels. • HKFES does not mitigate trench rescues to a level above awareness and would require a fire service outside the County of Bruce to respond. The County of Bruce Mutual Aid Asset Report fails to list trench rescues in its list of core services. The closest fire service mitigating trench rescue incidents would be from Barrie or London. The Fire Chiefs of the County of Bruce should develop a county-wide mitigation strategy in mitigating trench rescues. • The Township's Fees By-Law should include the total cost recovery for expenses that these types of incidents may incur. Tiered Medical Calls • While the agreement includes a list of the types of medical calls HKFES will respond to, it is an excellent practice to review the list and level of service annually and consider possible enhancements in service provision.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		• The agreement does not identify the medical training the firefighters will receive. It should determine the level of training, such as First Responder or Emergency Medical Responder. • Consideration should be given to training and permitting the firefighters to administer epinephrine (Epi-Pen) under medical direction. • In the agreement, list any medications dispensed by firefighters and the medical oversite for these. • Fire departments within the County of Bruce medical response agreement should lobby the Ministry of Health and Long-Term Care (MOHLTC) and the OFM to expand the simultaneous notification program to include all fire services in the province. • HKFES's Fire Chief should monitor the arrival times of the Bruce County Paramedic Service (BCPS) and relate any concerns to the Paramedic Chief. Land Ambulance Agreement • The fire chiefs of the County of Bruce and BCPS should discuss the value of the paramedic supervisor carrying cyanide antidote kits onboard their vehicle to be administered to victims of smoke inhalation, reducing effects sooner.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
	Wind Farms *Response Protocols*	**Risks –** The Township has become well known for the number of wind turbines in operation. By-Law 2013-60 regulates their construction. Numerous codes, regulations, and standards govern the installation and operation of wind turbines. Wind turbines present risks such as high-angle rescue and fires within the units. Rescues or fires in structures of this height and complexity are challenging for fire services. If a fire were to occur, most fire services would not risk the lives of firefighters to scale the structure due to the risk of a catastrophic failure. HKFES firefighters require training to the awareness level on the operations of the units, along with an understanding of the wind farm owner's response capabilities. HKFES does not perform high-angle rescues. *Treatment Options* **Avoid and Transfer Risk –** • The owner/operator of the wind turbine is responsible for mitigating high-angle rescues from these units.
	Township of Huron-Kinloss and the HKFES *Designated fire routes, Private Laneways/Roadways*	**Risks –**It is a concern to the fire service when vehicles are parked in streets and private roads within private property which must be accessed by fire apparatus, as these vehicles impede accessibility. *Treatment Options* **Avoid and Mitigate Risk –** This may be achieved by: • Develop a by-law in cooperation with the Roads and Building Departments of the Township to regulate the building of private roads and designating roadways as fire routes.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		○ Depending on the wording within the by-laws, there may need to be a subsequent by-law for each location with designated fire routes. • HKFES should work with mercantile, industries, and resorts to ensure that security gates, if present, are not impeding access to the complex. • Include in the by-law and enforce OFC Articles 2.5.1.2. (1), 2.5.1.3. and 2.5.1.3.[23] ○ 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. ○ 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.
	Huron-Kinloss Fire & Emergency Services *Bruce County Mutual Aid Plan* *Fire Service Response Agreements*	Risks – Bruce County Mutual Aid Plan It is common during large fires for the responding fire service to deplete its resources and the need arises to call neighbouring departments to assist. In most situations, it is the lack of water supply to provide a constant flow of water onto the fire that poses a risk to the fire department (and community). HKFES is a member Fire Department of the Bruce County Mutual Aid Plan. As such, and as approved by the council, may respond when requested outside the municipal boundary to assist another fire department, as permitted within the *FPPA*, 1997.

[23] "Fire Protection and Prevention Act, 1997, Ontario Regulation 213/07 Fire Code," Accessed December 15, 2022, 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	Preferred Treatment Option
		Some municipalities have developed and passed a stand-alone by-law regarding the fire department's participation in mutual aid plans and programs. Article 17 of HKFES's E&R By-Law 2020-120 permits the Fire Department to participate in the Mutual Aid Plan. Still, most Mutual Aid Plans and Programs in Ontario are due in 2022 to be reviewed, updated, and submitted by the mutual aid coordinator of the district to the OFM. Bruce County's Mutual Aid Plan is current and thorough. Response and Automatic Aid Agreements A longer response time due to fire departments having to travel further puts lives at risk. The Township of Huron-Kinloss has a Fire Protection Agreement with the Municipality of Kincardine. Kincardine Fire & Emergency Services provides automatic aid to the northwestern portion of the Township, while HKFES protects a small southeastern part of Kincardine. If either Municipality did not have these agreements in place, fire protection to those locations would take longer to arrive, and in most cases, the structure on fire may be a total loss. The FPPA supports automatic aid agreements. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: Bruce County Mutual Aid Plan • Review and update by-laws to ensure they are current and reflect the everyday operations of the HKFES. • The Bruce County, Mutual Aid Plan, requires updating every few years, as with the plans of all the counties and districts in Ontario.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		Response and Automatic Aid Agreements • Review and update the current agreement to meet the needs of the Township of Huron-Kinloss. • In the agreements, identify any special fees that might be attached. • Ensure to include technical rescues in the Fees By-Law at full cost recovery.
	Township of Huron-Kinloss *Emergency Management Program* *Emergency Operation Centres* *Mutual Aid Assistance Agreement*	Risks – Emergency Management Program Under the *Emergency Management and Civil Protection Act* R.S.O. 1990 (*EMCPA*), municipalities must have an ERP. The plan is to be updated yearly, along with training exercises completed. Council passed the latest Emergency Management Program, the Municipal ERP, in By-Law 2017-123. The ERP was last updated and edited in 2018. This plan needs to be updated to reflect current practices and abilities. The Township of Huron-Kinloss has implemented the Incident Management System (IMS) into By-Law 2017-123 but lacks reference to it in the ERP. Unfortunately, the Township has not organized a real-time practical exercise in the past six years. Many Ontario municipalities have never undertaken real-time training. This is due to various reasons, but it is mainly associated with costs and logistics. ERP shortcomings often get identified during a real-time exercise. While the CEMCs have completed emergency management courses available online, senior management team members have also take advantage of them.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		Emergency Operations Centres Locations of the EOCs: • Primary – Ripley Fire Station # 150 • Secondary – Lucknow Fire Station #160 • Tertiary – None EOCs must have an emergency backup power supply that energizes the entire structure. EOCs also require reliable IT, Wi-Fi capabilities, meeting rooms, rest areas, and kitchen facilities. The dedicated EOC room needs to be large enough that many people can operate within it. Too often, municipal managers are trying to provide an efficient operation in rooms with little space. Fire stations are not optimal EOCs and should be in a facility other than the fire stations. During an emergency, the fire stations will be busy with firefighters and apparatus coming and going, and the extra traffic in the area may impede their response. Security at an EOC is paramount, and should not be accessible to the public and have security card access. Controlled public access ensures uninterrupted operations in a safe and secure workplace. 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 and create a loss of functionality. In such cases, the EOC may need to rely on messengers to distribute information to those in the field.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		Most municipalities need redundancies in place when IT connections are lost. Technology can bridge this communication loss, which could be operational within 30 minutes. Mutual Assistance Agreement The Township of Huron-Kinloss has provisions for the Township to call for resources and staff from a neighbouring municipality or the County of Bruce in By-Law 2017-117. When response agreements are in place, they should be in the appendix of the ERP. *Treatment Options* Avoid and Mitigate Risk – This may be achieved by: Emergency Management Program • The Emergency Management Program By-Law 2017-123 should be reviewed and updated for the council's approval. • As MECG members change, new members must complete the Basic Emergency Management Course. They should also complete the IMS 100 and 200 courses available for free online through Emergency Management Ontario (EMO). • The CEMC and alternate CEMC should complete IMS 300 as a minimum. • The senior management team that is not a member of the MECG should complete the 100 and 200 series of emergency management courses. • The Township should plan a joint real-time practical exercise that involves activation of the primary and secondary EOCs and involves both their staff and those of their allied service agencies.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		EOCs • The Township should set up each EOC yearly to ensure the infrastructure is operational as required during a real emergency. • Consider an agreement with a neighbouring municipality allowing the Township of Huron-Kinloss to use their EOC if its primary and secondary locations are unavailable. This location would be the Township's tertiary EOC. • 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., trip or fall in the dark). • 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. EOCs – IT Connections • The Township should review , its current level of IT support during an emergency and identify the options for non-traditional IT services. • Options include the acquisition of portable satellite(s) and associated infrastructure. • Obtain a subscription with a third party for internet provision, which relies on low-level satellites. Mutual Aid Assistance Agreement • Update Mutual Agreements as needs and trends change.
	Marinas/ Boat Launches	Risk – The area's two marinas look after the needs the travellers using marine vessels. The summer months produce high maritime traffic. Due to the construction materials used in making a vessel, they present challenges when on fire.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		Treatment Options **Avoid and Mitigate Risk –** This may be achieved by: • If a fire involves fuel or a fibreglass vessel, HKFES may require abundant foam concentrate. • Following a fuel spill into the water, containment booms and absorbent materials may be required.
	Tillsonburg Fire and Rescue Services (TFRS) *Dispatching Services for Huron-Kinloss Fire & Emergency Services*	**Risks –** TFRS dispatches HKFES's two fire stations to incidents along with 37 other fire stations in Southern Ontario. HKFES has been quite satisfied with the level of service provided and can communicate any concerns. TFRS is working towards meeting standards established in NFPA 1225, *Standards for Emergency Services Communications*, and NFPA 1061, *Standard for Public Safety Telecommunications Personnel Professional Standards*. Communications Operators are required to become certified to NFPA 1061 in the province. The agreement with TFRS for dispatching was updated per by-law 2022-36 that came into effect on January 1st, 2022, and is in effect for five years. *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • Dispatchers trained to NFPA Standards 1061 are in Schedule A of the Dispatching Services Agreement but do not indicate if they will complete the process and become certified. • Change NFPA 1221 to NFPA 1225, consolidating NFPAs 1221 and 1061 into a single document.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
	Owen Sound Police Service is the Township's Central Emergency Reporting Bureau (CERB) NG 9-1-1 Public Safety Answering Point (PSAP)	**Risks -** Prepare for the Next-Generation 9-1-1 and its effects on the emergency services in the Township. There has yet to be a confirmed cost provided by the federal government, which is bringing this new system into effect. Some large municipalities, such as the City of Hamilton, that operate communications centres are budgeting as much as $31 million for upgrades. Early estimates are that NG 9-1-1 system could cost communications centres up to $1 million or more, which inevitably will be passed on to the clients. This transition will impact the Fire Department budget. 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: • Municipalities should begin budgeting for NG 9-1-1 implementation to take effect in 2025.
	Township of Huron-Kinloss and the Huron-Kinloss Fire & Emergency Services *Possible Litigation Matters*	**Risks -** Each year, more fire departments find themselves and their municipality in court defending their actions, or lack thereof, about activities at an incident. In many of these cases, it has to do with a fire department leaving the scene of a fire and the fire then reigniting; the structure receives additional damage, as the department did not ensure extinguishment before departing. *Treatment Options* **Avoid and Mitigate Risk** – This may be achieved by: • HKFES should first understand the underlying factors of fire service liability to prevent legal proceedings from occurring.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
		○ If an incident does arise, the Fire Chief and the municipality's senior management team should develop a plan to reduce the harm that may occur, which may lead to a lawsuit. • The key to helping prevent lawsuits is realizing the importance of having policies, procedures, and training in place. • Develop SOGs and policies on firefighters posting pictures of fire scenes they attended without permission of the Township or the Fire Chief. The OFM has previously cautioned about posting photographs of fire scenes online as they may jeopardize fire investigations.
Community Services Profile	Huron-Kinloss Fire & Emergency Services	No risks were identified.
Economic Profile	Electricity *Loss of Power*	**Risks –** Township residents often lose power. Society depends on electricity for daily living requirements, and if it is not available for long durations, this becomes a significant inconvenience, especially for businesses. Loss of electricity in the winter has led to desperation whereby residents have resorted to using a barbeque indoors for cooking and heat. Some have used gas-fed cooking appliances also as a source of heat. Doing so could lead to CO poisoning and possibly death. A generator could prevent heat loss, food loss due to spoilage, lost sales, and lack of power to operate equipment. Improper use of a portable generator can lead to fires and CO exposure. *Treatment Options* **Avoid and Mitigate Risk –** This may be achieved by: • Promote to business owners and residents the advantages of having a standby generator and education around fire safety and CO safety in the event of power loss.

Mandatory Profiles	Top Risk or Issues & Concerns	Preferred Treatment Option
Past Loss and Event History Profile	Fire Cause Determination *NFPA 921 and 1033*	**Risks –** The Fire Chief is trained and certified to 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 officers complete training in this discipline. Fire investigations are very time-consuming to complete, and in some cases, this time is in limited supply, resulting in the fire's origin and cause being undetermined. To establish an apparent fire cause and origin, HKFES ensures that documentation is sufficient, and a reasonable effort is made. *Treatment Options* **Avoid and Mitigate Risk –** This can be achieved by: • 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 HKFES complete NFPA 1033, they must ensure that they also achieve their Pro Board/IFSAC standards certification. Failure to do so may question the qualifications of the investigators during a trial. • Following the agency's directives, notify outside agencies such as the OFM, TSSA, ESA, 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
Profile Worksheets

APPENDIX A - PROFILE WORKSHEET #1-GEOGRAPHIC

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

The Township'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.

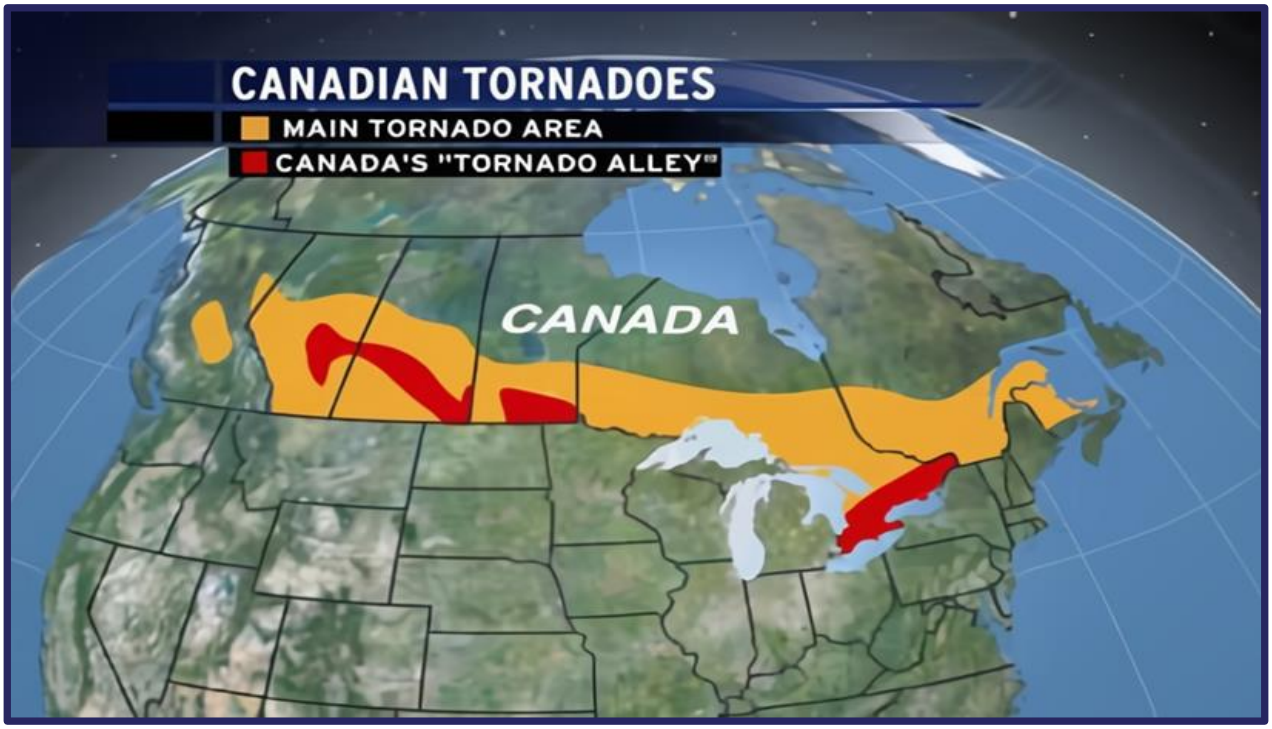
Located on the eastern shore of Lake Huron makes the Township of Huron-Kinloss a prime destination in the summer months due to its many beaches. While located in the densely populated Southern Ontario, it is relatively remote and remains a primarily rural farming community with many woodlots of standing timber. Fishing is a vital summer pastime as Lake Huron and inland waters are renowned for fishing. Boat launching and slips are available at the Point Clark Boat Club or the Pine River Boat Club.

A sparsely populated shoreline becomes inhabited by many visitors in the summer, with the village of Point Clark situated to the south and Boiler Beach at the north end. There is a mix of permanent and seasonal residences, with the more urban areas being Lucknow and Ripley.

The topography is sloped, and the terrain slopes downward from the east to the west. Slow-moving creeks and rivers support drainage flow into Lake Huron.

The area experiences severe thunderstorms that could develop into a tornado. Because of its geographic location, it is in a prominent area of Canada at risk of experiencing a tornado at some time.

FIGURE #1: MAP OF PROMINENT TORNADO RISK AREAS IN CANADA



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

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
Rivers, Lakes, Streams, Wetlands, and Watersheds *Several watercourses include the Pine River, Royal Oak Creek, Clark Creek, Boyd Creek, Eighteen Mile River, and their associated watersheds.*	*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* - HKFES 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 also create an impact if the caller cannot provide accurate directions to the location of the incident. When there is flooding, it may impact the following:

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services

	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, evaluate damage, and action repairs.
	
	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 four beaches in the Township see high visitor traffic during the summer, increasing the risk of a water incident.
	
	The Township does not have a proprietary Emergency Flood Response Plan and refers to Saugeen Valley Conservation Authority and Maitland Valley Conservation Authority's Flood Plans when required.
	
	• The Township may need to implement the flood plan during flooding.
	• Most flooding events are weather-related. The frequency of fierce storms has increased due to climate change.
	• Flooding is caused by:
	  o Extreme rainfall/runoff from intense storms or rapid snow melting.
	  o Extreme weather event overloads the storm and sanitary sewer system creating a back-up of water.
	  o High lake levels or a storm surge by strong winds.
	
	In spring, fast-flowing water may result in water rescue calls.
	
	HKFES does not have the capacity, ability, and training to perform swift water rescues.
	
	HKFES has no marine vessels to use on Lake Huron.

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
	The risk of drowning occurs, in part, 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 HKFES* Current Capabilities • HKFES has the training and equipment to perform ice and water rescues at the awareness level and provides shore-based rescues up to 23 m (75') from shore. Mitigation Strategy • With the Canadian Coast Guard close by and a station in Goderich, implementing a response agreement that includes joint training would be a viable option compared to HKFES having to acquire a vessel. • The South-Bruce OPP Detachment has a vessel moored at one of the local marinas that would be available for water rescues. HKFES should take advantage of any joint training opportunities. • Enter into a response agreement with the closest fire service that operates a vessel or performs ice/water rescues to the Operations Level. • HKFES should note the following points if it chooses to acquire and operate a vessel: o The operation must follow commercial vessel regulations. o Provided the vessel is not greater than 8 m (26 ft) and does not go out further than 3 km (2 mi), the training required is the Pleasure Craft Operator Course which is available online. o If the vessel is greater than 8 m (26 ft) in length and travels more than 3 km (2 mi) out from shore, the members of the HKFES would then be required to complete training in Marine Emergency Duties - Small Domestic Vessel - Basic Safety (MED-SDV-BS). o Some members must also complete the Small Non-Pleasure Vessel Operator Proficiency (SVOP) course.

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
	○ Depending on the type and size of the vessel acquired and the number of firefighters trained to operate/ride it, the financial impact ranges from $200,000 to $350,000. • The Township of Huron-Kinloss could install lifebuoys along public beaches with signage promoting water safety. • HKFES should review and update current response protocols and SOGs and develop new ones as required. ○ Ensure these meet industry standards, such as Section 21 Guidance Notes and NFPA 1006.
Provincial Highways, County, Municipal, and Private Roads	The municipality sees a higher volume of traffic during the summer months. Many road vehicles are electric, which presents hazards not seen with traditional vehicles. • Risks include electrocution during extrication calls if power is not de-energized properly. • Require copious amounts of water to cool batteries and extinguish fires. Road closures or detours due to construction 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 hazardous materials. If future roundabouts are constructed in the Township, they must be of adequate size so as not to impede the response of emergency apparatus. The HKFES must be included in the planning process to ensure the turning radius does not restrict the travel of the apparatus. Traffic-calming measures are another standard measure that aids in controlling the speed of vehicles. Consider traffic-calming measures during the planning and design stages of new developments. While

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
	effective, they impede fire apparatus during emergency responses and may lengthen the response time. Damage may occur to the suspension of fire apparatus if travel over the measures is too quick. During snowstorms in the winter, visibility could be zero, and the roads impassable. During the heavy flow of water from flooding, there is the risk of some roads experiencing damage that may result in their closure for a long time. There is a history of flooding when the water levels of Lake Huron are high. Flooding may also occur during heavy rainstorms. Emergency services have not experienced delays during responses due to flooding. The Lakeshore area of the Township experiences increased traffic during the summer. HKFES does not have pre-emptive traffic control devices in any of its apparatus. The Township has developed By-law 2019-11 that supports a Public Works Policy that regulates the construction of entrances and private roads. *Response/ Mitigation Options and Capabilities of HKFES* Current Capacities • HKFES does not have pre-emptive systems installed in its traffic lights. Mitigation Strategy • When designing upgrades to main arterial roads, the Township should complete traffic studies and, if warranted, transform the street from two to four lanes to improve traffic flow. • Forward data identifying locations that experience a higher number of MVCs to the Public Works Department for further review. • Ensure SOGs, policies, and training are in place for responding to electric vehicle emergencies.

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services

	• HKFES may need to purchase specialized extinguishing equipment for fires involving the batteries of electric vehicles.
	• HKFES must be informed of road closures, so responding apparatus may be aware of them.
	• If traffic lights are implemented in the Township, consider:
	  ○ Include pre-emptive devices in new traffic control signal installations to aid fire apparatus in the response unimpeded by traffic lights.
	  ○ Pre-emptive devices may improve response times as the fire apparatus will have priority at traffic control signals and not be required to stop for a red light.
	  ○ HKFES should engage the traffic department of the County of Bruce to review opportunities for installing pre-emptive devices on county roads.
	• HKFES may need to upgrade their extrication tools to battery-operated units.

Transportation of Nuclear Waste	While the proposed Deep Geological Repository is outside the Township, there lies the risk that nuclear waste travels through the Township to the site. The International Atomic Energy Agency's nuclear waste transport standards set the regulations by which the Canadian Nuclear Safety Commission (CNSC) and Transport Canada establish transportation regulations. The regulations for the transportation of nuclear waste are very stringent and consider all facets of emergencies. *Response/ Mitigation Options and Capabilities of HKFES* Current Capacities • HKFES SOG 6-9 identifies response levels to Chemical Biological Radiation Nuclear Explosive (CBRNE) incidents. • Firefighters are trained to NFPA 472 and respond at the awareness level to CBRNE incidents.

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
	Mitigation Strategy • Either include in SOG 6-9 or develop a new SOG that has enhanced information on the transportation of nuclear waste and the capsules the waste is in. • Develop a training summary on nuclear/radiation emergencies, and considerations on the types of radioactive waves and the importance of time, distance, and shielding when responding. • Arrange for joint training with Bruce Power on the risks and protocols when responding to a nuclear/radioactive incident. • If pre-determined travel routes of the waste through the Township are known, develop Emergency Detour Routes for rerouting traffic if an incident were to occur.
Topography	The elevation of the Township is 250 m (820') above sea level. While the Niagara Escarpment does not run through the Township, its western edge has some influence on local elevations. Many inland water courses exist, providing excellent opportunities for fishing. There are numerous parks and open recreational lands for many sporting activities. Several trails are also available. Risk of individuals becoming injured on any of the eight designated trails. Some heavily forested rural areas may experience a lightning strike, causing a fire. This threat has a low risk of occurring. The greatest risk of a wildland-urban interface fire is in the Lakeshore settlement area. *Response/ Mitigation Options and Capabilities of HKFES* Current Capacities • HKFES does not have the equipment to transport injured parties off the trails.

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
	Mitigation Strategy • Consider obtaining a utility terrain vehicle (UTV) with tracks as a multi-purpose unit for carrying equipment, mitigating/suppressing wildland fires, and patient transport.
Oil and Gas Wells	Seven oil and gas wells are in the Township of Huron-Kinloss, all inactive and abandoned. Several hazards exist with oil and gas wells, which include:[25] • Either soil staining or dead vegetation would identify product leakage to the surface. • Hydrogen sulphide may escape from a leaking well. • High-pressure oil and highly flammable gas may be present from a leaking well. • During drilling operations, a blowout occurs when natural gas is encountered. The oil/gas fluid is then released around the drilling rig, creating an environmental hazard from the spill, and a fire may occur. *Response/ Mitigation Options and Capabilities of HKFES* Current Capacities • HKFES does not have the resources and training to mitigate an emergency at an oil/gas well. Mitigation Strategy • HKFES must ensure that SOGs, policies, and training are in place for responses to oil/gas well emergencies. • HKFES to complete pre-incident plans for each active well if one becomes active in the Township. • Develop a mitigation strategy for oil/gas well fires with the operator.

[25] "Oil and gas," Ontario, Accessed May 9, 2023, https://www.ontario.ca/page/oil-and-gas

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services

	• Ensure maps of all well locations are available, whether active or not.
	  ○ To locate oil/gas wells in the Township of Huron-Kinloss, refer to the maps provided by the Province of Ontario at: https://geohub.lio.gov.on.ca/datasets/lio::petroleum-well/explore?location=42.284364%2C-82.667605%2C11.00.
	  ○ Establish a database of all active wells and emergency contact information.
	• Conduct joint training on site familiarity and drilling operations with companies that may be drilling 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 Township 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.

Railways	No railways operate in the Township.

APPENDIX B - PROFILE WORKSHEET #2-BUILDING STOCK PROFILE

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.

HKFES must identify facilities containing LWC and maintain their inclusion in decision-making during a fire. Structures containing LWC are known to fail in under 20 minutes upon fire ignition for 2 x 10 framing members and engineered roof truss in under seven minutes.[27] 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 should work with the HKFES to ensure they know of any new buildings containing this component 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 containing unprotected LWC.
- When uncertain if LWC is present, assume it is.

When developing procedures, consider the following:

- Any unique hazards present in structures with unprotected LWC while focusing on firefighter safety.
- Use thermal imaging cameras (TIC) or other thermal technology 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, including any limitations and the ability to identify a fire below the floor's systems.

[27] "Lightweight construction: Hazards you should know," Jason Poremba, Accessed June 19, 2023, https://www.firerescue1.com/firefighter-safety/articles/lightweight-construction-hazards-you-should-know-DkQG9AMNOgsaXyru/

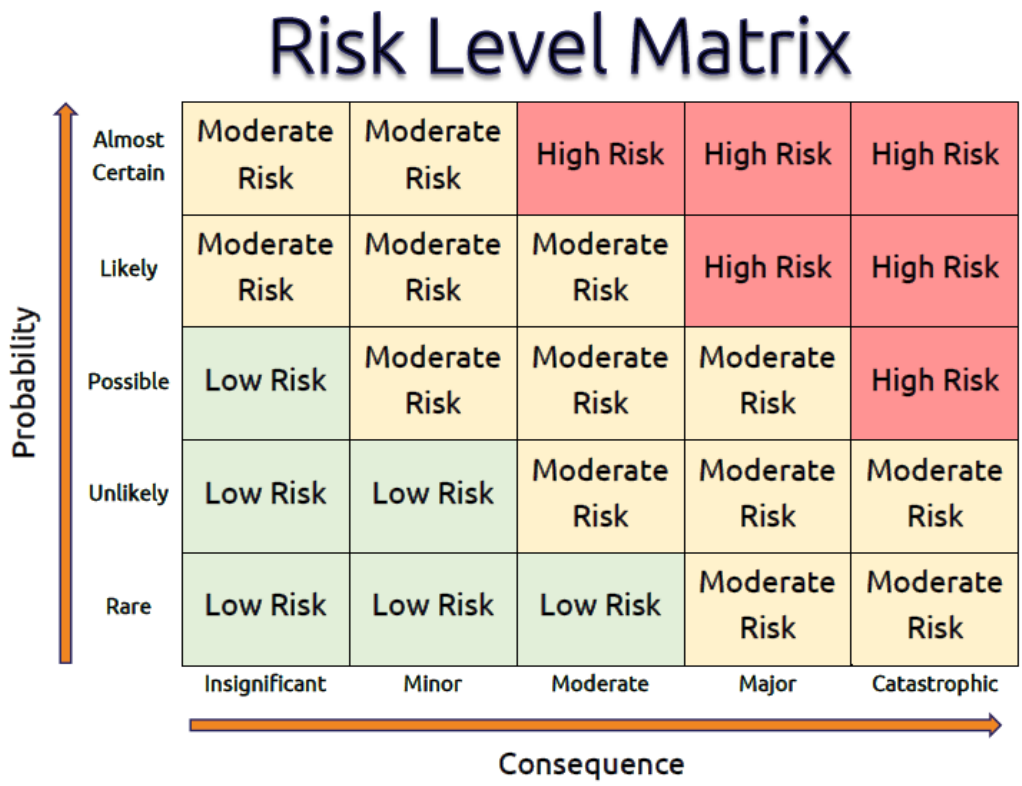
- Stress the need for crews to use extreme caution when operating on or under unprotected lightweight truss roofs or floors.
- The Incident Commander must evacuate firefighting crews once they know that flame impingement occurs on unprotected roof trusses.
- Ensure emergency warning procedures and training 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.

Through the use of data obtained from the MPAC, the Township and the HKFES 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.

Assign probability, consequence, and risk levels to each.

Assigning a level of risk assists fire departments in their 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.

FIGURE #2: RISK LEVEL MATRIX

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

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

Property Code: Occupancy Classification	Total Number of Occupancies				
	2023	2024	2025	2026	2027
100 Series: Vacant Land	737	55			
200 Series: Farm	1,046	627			
300 Series: Residential	3,502	3,553			
400 Series: Commercial	110	111			
500 Series: Industrial	47	40			
600 Series: Institutional	8	7			
700 Series: Special and Exempt	43	38			
800 Series: Government	4	4			
Total of All Occupancies	5,497	4,435			

TABLE #3: TOTAL NUMBER OF OCCUPANCIES BASED ON THE OBC OCCUPANCY CLASSIFICATIONS

Occupancy Classification Based on 2023 Data		Number of Occupancies 2024	Number with LWC
Group A	Assembly		
Group B	Institutional		
Group C	Single-Family		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 lightweight construction components			

***Note**: Ontario Regulation 332/12[28] states that occupancies incorporating LWC must be identified, except for houses. Fire Departments should assume all new residential occupancies contain LWC and respond accordingly.*

[28] O. Reg. 217/22: BUILDING CODE (ontario.ca), Accessed June 4, 2023, https://www.ontario.ca/laws/regulation/r22217

The data for Table #3 must be obtained from the Building Department and be inserted into the table. This data is a mandatory requirement of the OFM, and failure to do so may result in fines.

TABLE #4: CENSUS CANADA - HOUSEHOLD AND DWELLING CHARACTERISTICS BY YEAR

	2011[29]	2016[31]	2021[33]
Total Occupied Private Dwellings by Structural Type of Dwelling	2,610	2,775	3,025
Single-detached Home	2,355	2,500	2,745
Semi-detached Home	25	45	50
Row House	55	45	50
Apartment or flat in a duplex	20	0	0
Apartment in a building that has fewer than five storeys	125	165	170
Apartment in a building that has five or more storeys	0	0	0
Other single-detached houses	0	5	5
Moveable dwelling*	25	10	5

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

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[29] Census Profile (statcan.gc.ca), Accessed June 4, 2023, https://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3541015&Geo2=PR&Code2=01&Data=Count&SearchText=huron-kinloss&SearchType=Begins&SearchPR=35&B1=All&Custom=&TABID=1

[31] Census Profile, 2016 Census - Huron-Kinloss, Township [Census subdivision], Ontario and Ontario [Province] (statcan.gc.ca), Accessed June 4, 2023, https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3541015&Geo2=PR&Code2=35&SearchText=Huron-Kinloss&SearchType=Begins&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=3541015&TABID=1&type=0

[33] Profile table, Census Profile, 2021 Census of Population - Huron-Kinloss, Township (TP) [Census subdivision], Ontario (statcan.gc.ca), Accessed June 4, 2023, https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Huron%2DKinloss&DGUIDlist=2021A00053541015&GENDERlist=1,2,3&STATISTIClist=1,4&HEADERlist=0

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. • High occupancy (based on the type of meeting(s) • May experience overcrowding by patrons. • 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	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)
		• 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 LWC.				
Group B	Detention Occupancies	• There are no police detachments or detention centres in the Township. When considering future growth, an OPP detachment could locate in the Township. • This occupancy classification includes holding cells in police detachments and extensive detention facilities. • Restricted access • High occupancy load • Potential for violent interaction	Not Applicable	Not Applicable	Not Applicable	Total number of structures that fall in this occupancy classification – **Zero** 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)
		• Potential for civil disobedience • It may have a maze of hallways that are difficult to navigate in smoke conditions.				
Group B	Care & Treatment	There are 6 vulnerable occupancies in the Township of Huron-Kinloss. These include 2 care occupancies, 1 long-term care facility, and 3 retirement homes. • 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.	Unlikely	Moderate	Moderate	Total number of structures that fall in this occupancy classification – 6 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)
		• Many of these facilities experience a high staff turnover that may mean some new personnel may not have received emergency protocol training.				
Group C	Single Family*	The Fire Department / municipality considers the presence of LWC probable. • May lack working smoke and CO alarms. • May lack a home escape plan. • They may lack fire extinguishers. • Often a lack of residential sprinklers. • Most of the newer residential structures have LWC within the roof, floors and, in some instances, the walls. • Some older buildings may have balloon construction practices.	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)
		• This risk arises when a fire occurs inside walls due to the lack of braces between the studs on the walls. 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. • This occupancy type experiences most of the fires in the Township. • Some may have marijuana grow operations (potential fire concern). • Fires not monitored for safe operation or left unattended (e.g., candles, fireplaces, wood stoves, smoker's articles).				

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)
		• Dwellings are used as lodging for multiple inhabitants with bedrooms in basements, operating as a second suite/unit. • It may lack direct egress from the basement to the outside. • Property owners may not understand their responsibilities regarding fire safety and fire code. • HKFES should review its Fire Prevention resources regarding adequate staffing to inspect the Township's second units and garden suites. • HKFES, in cooperation with the By-Law Department, should work collaboratively to establish and advertise a reporting method to identify possible illegal locations. • Second units and garden suites must meet OBC and OFC requirements.				

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)
		• Provincial legislation supports the installation of second units and garden suites. • Building stock growth will result in additional residents. • Few of the occupancies in this category are seasonal, and properties are vacant for long durations of the year.				
Group C	Multi-unit Residential	**The Fire Department/ municipality considers the presence of lightweight construction probable.** • The units have a higher occupancy (than that of a single-family dwelling). • They may lack an escape plan. • 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.	Possible	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)
		• Must be constructed to OBC and or OFC Standards. • Human behaviour (cooking, use of 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. • There may be a lack of knowledge of shelter-in-place procedures. • The building may have LWC within the roof. • An amendment to Zoning By-Law is coming forward to increase building height to five storeys. • Fires in higher structures will be challenging for fire service resources.				

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 in higher structures may necessitate specialized training for firefighters on elevator operation, ventilation systems, smoke travel, firefighter deployment, thermal/smoke column in stairways, sprinklers, and hose connections. • Tenants may not respond appropriately to fire alarms due to malicious false alarms. • Fires could occur above and below ground level and in apartment buildings.				
Group C	Hotel/ Motel	There are opportunities for future growth in this occupancy classification in the Township of Huron-Kinloss. • 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 no residential trailer parks in the Township. There are four campgrounds in operation with over 1,000 sites between them. • They have high combustibility due to their construction materials. • The risk of high fire loads exists, and, in some cases, hoarding may be evident. • Seasonal usage for out-of-town visitors. • It may lack smoke and CO alarms. • Trailer parks can have limited access routes. This issue can hamper the response by HKFES. • 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. • Frequent turnover of visitors.	Unlikely	Moderate	Moderate	The total number of structures that fall in this occupancy classification – Statistics Canada reports five moveable residences in the Township in 2021. 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)
		• Most visitors do not consider fire safety a concern while at camp. • Multiple structures on site 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. • HKFES may need to address any safety concerns with bonfires. • Many will use LPG for heating and cooking, which increases the risks of leaks and fires.				

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 D & Group E	Business & Personal Service & Mercantile	HKFES has not attended any dollar loss fires in either occupancy classification in the past six years. • Small local business • Numerous small businesses will need to have fire inspections. • HKFES may require additional resources for the completion of inspections and to meet the needs of public education. • It may have heavy timber construction or common basements. • When a joined main street business incurs a fire, it may spread quickly from one unit to another. • A high volume of occupants. • Highly combustible items, such as seasonal decorations, are stored. • The roof, floors and walls may have LWC. • Most lack fire sprinklers.	Rare	Insignificant	Low	The total number of structures that fall in this occupancy classification – Group D – Business & Personal Services Occupancies – Unknown 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)
		• May lack pre-incident plans completed by the fire department. • 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 merchandise.				
Group F	Industrial	HKFES responded to three fires in this occupancy over the past six years. • May lack a current emergency or fire safety plan for the occupancy. • The fire department may lack pre-incident plans. • High fire loads may exist due to the type of industry or stock.	Unlikely	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)
		• Due to the runoff of a product during a fire, there could be 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. • 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. • May lack outer perimeter access, which could hamper fire department response.				

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)
Other	Occupancies not classified in OBC. *Farm buildings fall under the NBC*	Consider the following points when dealing with occupancies not classified under the OBC or National Building Code (NBC). • Old construction of heavy timbers. • High fire loads (e.g., hay, straw, farm equipment). • The lack of fire separations in driving sheds and barns allows fires to spread quickly throughout the structure. • Structures in proximity become exposure risks. • Possibly poor housekeeping practices. • Due to their lack of security, remoteness, or vacancy, abandoned farm buildings are targets for arson. • Farm structures used for non-intended purposes (e.g., illegal drug activity). • Lack of water supply nearby for fire suppression operations.	Possible	Moderate	Moderate	Total number of structures that fall in this occupancy – **Unknown** 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 Township of Huron-Kinloss and how they relate to fire and other emerging risks in the community.

Society has a great reliance on the power supply; therefore, there is a level of inconvenience when interrupted. Each year there are several severe weather-related power outages within the Township. An outage will impact the community, which may be essential to residents. In some cases, there is an increase in the level of risk when fire alarm systems are not operating along with the associated notification systems.

Communications infrastructure is critical during emergencies; document the location(s) of landline infrastructure and cellular tower sites and cooperate with providers to establish response protocols.

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	• Four water distribution systems with water purification plants in which Veolia Water Technologies operates on behalf of the Township. Water systems supply residents with water in Ripley, Lucknow, Whitechurch, and Lakeshore. • Veolia Water tests the water and ensures hydrants are flushed and operational. • There is a risk of infrastructure failure due to winter's freezing temperatures. • The minimum water pipe size should be 150 mm (6") to maximize flow rates during firefighting operations. • Large quantities of chlorine are used and stored at water purification facilities which are at risk of leaking.

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. • Steamer ports on hydrants should have Storz lugs instead of threads, thereby lessening the need for adaptors. • Water reservoirs contain between 24 to 48 hours' worth of water.
Wastewater and Storm Sewer Systems	• There are two wastewater treatment facilities in Lucknow and Ripley. • Having the automatic standby generator ensures uninterrupted operations. • There are large amounts of chemicals stored at the facility on Bell Drive • Large quantities of liquid aluminum sulphate storage tanks. • Depending on the type of chemicals, a leak may require the evacuation of Township areas. • There will be a delay in having a HAZMAT team arrive to mitigate an emergency. • No response plans are in place for handling a chemical leak at any wastewater treatment facility. A plan needs to be developed and practised for each facility.

Township of Huron-Kinloss Evacuation/ Reception Centres	• There are five designated centres.
	  ○ Ripley Huron Community Centre
	  ○ Lucknow Community Centre
	  ○ Point Clark Community Centre
	  ○ Lucknow & District Sports Complex
	  ○ Kincardine Davidson Centre
	• Each has amenities to sustain operations for several days, such as resting, eating, meeting areas, showers, and full kitchen facilities.
	• Each centre needs to be *AODA* compliant.
	• Each should have an emergency automatic standby generator that energizes the entire facility.
	• The Township has agreements with the County of Bruce and the Canadian Red Cross for their services in managing the centres' operations.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
Township of Huron-Kinloss Municipal Buildings and Operations	• Public Works is responsible for 530 km of roads to maintain. Includes 180 km of gravel, 43km tar surfaced, 306 km of asphalt surface, and 98 bridges or other structures that make up the road network. • Public Works Yards have buildings used to complete minor vehicle repairs and provide equipment storage and fuel storage. • Stored at Public Works yards are light and heavy vehicles and equipment. The inventory includes light pickup trucks, dump trucks, backhoes, graders, and tractors. • Store sign inventories, streetlighting parts, wear parts, stormwater pumps and equipment, and typical municipal maintenance items. • The Township's Municipal Office has an automatic standby generator that energizes the entire building. • Risk of loss of power at all locations.
Wind Farms	• Risk of fires and catastrophic failure of the structures. • HKFES must know of possible structural failure and establish collapse zones if on fire. • It may require a high-angle rescue. • The turbine owner is responsible for having a rescue mitigation strategy in place.
Solar Farms	• Risk of failure of infrastructure. • Risk of electrocution.
Ministry of Natural Resources and Forestry (MNRF)	• The Township has a Community Wildland Interface Fire Prevention and Response Plan to prevent and mitigate wildland fires. • MNRF responds to wildland fires upon request. • The goal is to prevent wildland fires from starting through public education initiatives.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
Hydro One Power Distribution Inc. and Westario Power *Hydro One – supplies power to all the Township except for Lucknow and Ripley. Westario their 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 level of theft and vandalism which can be a risk to the operations and response by first responders to the power facility. .
9-1-1 Communications (i.e., CERB operated by the Owen Sound Police Service)	• Risk of phone lines and breakdown of infrastructure.
Huron-Kinloss Fire & Emergency Services - Radio System	• Radio coverage throughout the municipality is good in 95% of the Township. • Risk of a radio system failure or power loss due to a generator failure or dead backup batteries. Require a backup plan in the event of failure of the infrastructure. • Arrange the completion of radio infrastructure and radio transmission coverage audits to identify opportunities to address any deficiencies and required upgrades. • Upgrading involves transferring to the digital platform, fixed and mobile repeaters, and upgraded or additional transmission towers. • Motorola will not support some radio systems post-2024. • HKFES should begin budgeting for moving to the digital platform, improving the quality and strength of radio signals while enhancing radio coverage. • HKFES may need to review whether bi-directional antennas need to be installed in new buildings with high amounts of concrete and steel to enhance radio coverage inside the structure. This enhancement would require the cooperation of both the Planning and Building Departments. • A consistent and dependable radio system is imperative for the health and safety of firefighters.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
	• A radio system requires redundancies, such as backup radio transmitter tower sites.
London Central Ambulance Communications Centre (CACC)	• Radio system infrastructure may fail. • Telecommunications systems may fail.
Bruce County Paramedic Service	• No paramedic bases in the Township equate to longer response times and a high volume of medical assistance calls for HKFES. There is a base in Kincardine (approximately 15 minutes away) as well as a satellite base in Holyrood. The Huron County Paramedic Service often responds to calls in Lucknow. • Due to staffing or call volume, a limited number of ambulances may be available, creating response delays by the paramedic service. • Ambulances may become delayed due to the location of the call within the municipality.
Telephones – Landline, Wireless, Internet *Bell Canada* *Hurontel*	• Possible failure of infrastructure • Upon failure of infrastructure, the municipality lacks redundancies. ○ The Township of Huron-Kinloss should explore obtaining a subscription with a wireless company that utilizes low-flying satellites. • Have Voice over Internet Protocol (VoIP) connections available in several municipal-owned buildings used during an emergency declaration. • Cell phones are available in some fire apparatus.
Natural Gas Transmission Systems –EPCOR (*Formally known as the Edmonton Power Corporation)*	• Most of the Township received natural gas for the first time in 2023. • Leaks may occur due to infrastructure failure or damage by other means. • Explosion and fire risk– ensure that SOGs, procedures, and training for such an event are current. • 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	• While HKFES has responded to fuel leaks/spills, the risk of fires and environmental impacts exists. • There is a significant amount of flammable fuel stored at retail fuel outlets. World events risk the creation of a fuel shortage. • Require containment equipment in the event of a leak or spill. All fuel storage tanks at either fuel depot in the Township of Huron-Kinloss are underground. • Require a large cache of Class B foam to suppress the vapours or use it as an extinguishment agent. • Some foam concentrates contain "forever chemicals" that do not break down, and some are known to be carcinogenic. HKFES should evaluate the brand of foam concentrate they have in service due to long-term health effects on humans by the chemicals used in its manufacture. Ensure the brand they purchase is free of the chemical fluorine.
Liquified Petroleum Gas Retail Outlets Propane *At the Co-Op in Ashfield-Colborne-Wawanosh, there is one 60,000 US gal storage tank and another 1,000 US gal dispensary tank.*	• 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. • HKFES must review the Propane Risk & Safety Management Plan 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.
Municipal Roads and Highways	• Unknown quantities and types of chemicals transported through the Township could result in a HAZMAT incident which would require an evacuation of residents of the Township. • During significant snow events, roads may become closed due to poor visibility and snow accumulation. • Downed trees from severe windstorms may block roads hampering HKFES's ability to respond to calls. • Fixed bridges require inspections to ensure load capacities do not restrict fire department vehicles.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
	• In some cases, when upgrading main arterial roads, they need to be expanded to four lanes if they are currently two lanes, which is becoming standard practice. • Roads may be closed due to an MVC, and traffic may need to be rerouted onto an emergency detour route, resulting in traffic gridlock.
Railways	• No rail lines are in operation in the Township of Huron-Kinloss.

Airports	• There are a couple of small airports in the Lucknow and Lakeshore areas, including:
	  ○ Shepards Landing Airport
	  ▪ Located 8.4 km (4.5 nautical miles) southwest of Kincardine.
	  ▪ A turf runway that is 732 m (2,400 ft) long.
	  ▪ The Shepard family operates the airfield.
	  ▪ Multiple types and sizes of aircraft use this airfield, especially with it close to the beaches. Five are stored onsite and maybe inside one of the two hangers.
	  ○ Lucknow Airpark
	  ▪ The airpark is northeast of the village of Lucknow.
	• Both airports are visual flight control as no air traffic control is available.
	• The Kincardine Municipal Airport is north of the municipal boundaries between the Township and the Municipality of Kincardine—a larger facility with asphalt runways, fuel, and facilities with amenities available.

Saugeen Valley Conservation Authority and Maitland Valley Conservation Authority	• Responsible for operating conservation sites. • Conduct monitoring of watershed erosion and flooding.
Hospital and Medical Treatment Centres	• Medical clinics are available in Lucknow and Ripley. • Hospitals risk closing emergency departments due to staffing short comes or other reasons. • Holyrood Clinic for Mennonite community ○ Dental office falls into this category.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
	• The closest hospitals are in either Wingham, Kincardine, or Goderich. ○ Travel distance to a hospital, no matter which one, is time-consuming, and there are no closer emergency facilities.
Bus Companies	• During evacuations, require buses to transport residents. • The Saugeen Mobility Accessibility Regional Transport (SMART) is available for those with physical disabilities. ○ School buses are typically unavailable during the school year, Monday to Friday, due to contractual obligations with school boards.
Long-term Care Facilities	• Require annual fire inspection. • Residents may have cognitive and mobility issues. • They may need more staff on evening and night shifts. • Oversite by the MOHLTC.
Veterinary Clinics (2)	No concerns noted.
Dental Clinics (1)	No concerns noted.
Pharmacies (2)	No concerns noted.
Food Retail	• No grocery stores within Huron-Kinloss. No concerns noted.

Educational Facilities
 	
Bluewater District School Board
	• Risk of domestic terrorism directed at educational facilities.
	• Other risks include:
	  ○ Playground injuries
	  ○ Students and teachers may experience violence directed toward them.
	  ○ Active shooter situations.
	  ○ Larger populated schools may take longer to evacuate during fire alarms.

Air Ambulance	• Helicopters may land at the location of an incident. • With no hospitals in the municipality, they have no heliports to land on.

Identified Critical Infrastructure	Issues/ Concerns/ Operations
Ontario Provincial Police	• Facilities – South-Bruce Detachment in Kincardine. • Radio transmission equipment failures.
Huron-Kinloss Fire & Emergency Services	• The Fire & Emergency Services Strategy Plan discusses fire station conditions and locations at length. • Security of stations can be a concern when not occupied. • Stations may require repairs, expansion, or replacement. • Drawing specifications and tendering of both apparatus due for replacement in 2028 and 2029 should begin now. Since the pandemic, delivery timelines have doubled – a pumper is 2 ½ years to 3 years. • Newer apparatus is difficult to fit into the smaller stations. ○ Most departments will use large tandem axle tankers with a water load greater than 6,800 litres (1,500 imperial gallons).
Deep Geological Repository	• While it will not be within the Township of Huron-Kinloss, the Township must prepare for a nuclear waste emergency. • Risk of a nuclear accident with the waste material. • The Township's ERP needs to incorporate responses to emergencies involving nuclear waste. Train for any emergency that may arise.
Media Outlets *Service Provision*	• The local radio station may go off the air and be incapable of broadcasting 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 Township's demographic profile will aid in identifying potential fire safety issues and concerns. The information will help the HKFES 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 an increased number of people in these demographic groups will help the HKFES prioritize its public fire safety education and Fire Code 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 #5: DEMOGRAPHIC NUMBERS BY AGE

Age of Population	2011[35]	2016[36]	2021[37]
0-4	450	470	525
5-9	360	440	485
10-14	395	375	455
15-19	455	380	365

[35] Census Profile (statcan.gc.ca), Accessed June 4, 2023, https://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3541015&Geo2=PR&Code2=01&Data=Count&SearchText=huron-kinloss&SearchType=Begins&SearchPR=35&B1=All&Custom=&TABID=1

[36] Census Profile, 2016 Census - Huron-Kinloss, Township [Census subdivision], Ontario and Ontario [Province] (statcan.gc.ca), Accessed June 4, 2023, https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3541015&Geo2=PR&Code2=35&SearchText=Huron-Kinloss&SearchType=Begins&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=3541015&TABID=1&type=0

[37] Profile table, Census Profile, 2021 Census of Population - Huron-Kinloss, Township (TP) [Census subdivision], Ontario (statcan.gc.ca), Accessed June 4, 2023, https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Huron%2DKinloss&DGUIDlist=2021A00053541015&GENDERlist=1,2,3&STATISTIClist=1,4&HEADERlist=0

Age of Population	2011[35]	2016[36]	2021[37]
20-24	400	355	325
25-29	370	380	395
30-34	340	380	420
35-39	315	350	430
40-44	320	315	385
45-49	465	355	370
50-54	550	495	405
55-59	555	570	560
60-64	545	590	665
65-69	425	575	650
70-74	310	395	560
75-79	210	250	325
80-84	180	180	200
85 & over	160	220	205
Total	**6,790**	**7,069**	**7,723**
Percentage Increase/Decrease from Previous Census	**+4.2**	**+4.1**	**+9.3**

Note: *For data on the population by single years of age, refer to the table titled 'Age (in single years) and the average age in the census data tables. The data in Table #5 are directly from Statistics Canada; the statistics can be conflicting and inconsistent. Statistics Canada allows for discrepancies in calculations.*

TABLE #6: POPULATION DISTRIBUTION

Total – Distribution (%) of the Population by Broad Age Groups*	2016 – 100%	2021 – 100%
0 to 14 years	18.2	19.0
15 to 64 years	59.1	56.0
65 years and over	22.8	25.1
85 years and over	3.1	2.7
Average Age	43.4	43.8
Median Age	46.2	46.0

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

TABLE #7: BREAKDOWN OF POPULATION BY ETHNICITY

Total – Visible Minority for the Population in Private Households *	2016 total 6,870	2021 total 7,550
Total Visible Minority Population	75	105
South Asian	30	25
Chinese	15	0
Black	10	35
Filipino	0	25
Latin American	0	0
Arab	0	0
Southeast Asian	0	0
West Asian	10	0
Korean	0	0
Japanese	0	10
Visible Minority (Not Identified Elsewhere)	0	0
Multiple Visible Minorities	0	0
Not A Visible Minority	6,795	7,445

***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 #8: INDIGENOUS POPULATION

Total – Indigenous Identity for the population in private households*	2016 total 6,870	2021 total 7,550
Indigenous Identity	100	125
Single Indigenous Responses	95	125
First Nations (North American Indian)	40	85
Métis	60	20
Inuk (Inuit)	0	0
Multiple Indigenous responses	10	0
Indigenous responses not included elsewhere.	0	10
Non- Indigenous identity	6,770	7,425

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

TABLE #9: LOW-INCOME POPULATION

Low-income Status for the Population in Private Households to Whom Low-Income Concepts are Applicable*	2016	2020
Total	6,870	7,550
0-17 years	1,500	1,710
0-5 years	555	610
18-64 years	3,920	4,040
65 years and over	1,450	1,800

**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 #10: INCOME POPULATION

Total Income Groups in the Population Aged 15 years and Over in Private Households*	2015	2020
Total	5,585	6,085
Without total income	165	175
With total income	5,425	5,910
Under $10,000	810	575
$10,000 to $19,999	965	800
$20,000 to $29,000	720	860
$30,000 to $39,999	560	625
$40,000 to $49,999	505	580
$50,000 to $59,999	375	475
$60,000 to $69,999	295	395
$70,000 to $79,999	220	295
$80,000 to $89,999	180	235
$90,000 to $99,000	135	180
$100,000 to $149,000	405	465
$150,000 and over	265	425

**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.*

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 and 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.

Identified Demographic Group	Issues/ Concern
Visible Minority Population	There are approximately 105 visible minorities living in the Township of Huron-Kinloss in 2021, an increase of roughly 30 from 2016.[44] • This demographic may experience language barriers, social barriers, and social-economic inequalities. • Like other demographic groups, some may lack knowledge on fire safety matters, including smoke and CO 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). • HKFES should review the need for multi-language and multi-cultural fire safety brochures and signage. • The significant growth in this demographic, an increase of 28.5% over 2016, identifies that the Township is becoming more diverse. • The HKFES does not reach out to this demographic due to the lack of resources and a small population; however, it has not been an issue. The Department should review this opportunity.

[44] Profile table, Census Profile, 2021 Census of Population - Huron-Kinloss, Township (TP) [Census subdivision], Ontario (statcan.gc.ca), Accessed June 20, 2023, https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Huron%2DKinloss&DGUIDlist=2021A00053541015&GENDERlist=1,2,3&STATISTIClist=1,4&HEADERlist=0

Identified Demographic Group	Issues/ Concern
General Population	**The population has increased by approximately 700 residents, a 9.3% increase in 2021.** • The current population density is 17.5 persons per km^2, based on the 2021 census.[46] • The County of Bruce's forecasted population growth is between 25% and 40% between 2021 and 2046.[47] • Increased drug-related medical events province-wide may increase the number of medical calls. Of all the calls HKFES responds to, approximately 38% were medical related in 2022. • With several tourist attractions, pedestrians, cyclists, and distracted drivers may disregard the movement of emergency vehicles. • When a fire alarm is activated, individuals may not understand the importance of vacating a building. • The employed demographic is challenging for the fire department to reach with fire safety messages. This issue may be due to their availability and accessibility. Employers could have concerns about employees disrupting their work duties to pay attention to fire safety messaging. • It may require additional resources that deliver public education messaging.

[46] Profile table, Census Profile, 2021 Census of Population - Huron-Kinloss, Township (TP) [Census subdivision], Ontario (statcan.gc.ca), Accessed June 20, 2023, https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Huron%2DKinloss&DGUIDlist=2021A00053541015&GENDERlist=1,2,3&STATISTIClist=1,4&HEADERlist=0

[47] Ontario Population Projections, 2021–2046 (gov.on.ca), Accessed June 19, 2023, https://www.ontario.ca/page/ontario-population-projections

Identified Demographic Group	Issues/ Concern
Homelessness and those Experiencing Low Income	There has been an increase in the number of homeless in the county. • Encampments have not developed in the Township of Huron-Kinloss as other communities in the province have experienced. Usually, none of the structures meet OBC requirements and are illegal. • Some buildings used for temporary shelter may not meet fire code requirements.
Crime-Related Fires in the Township of Huron-Kinloss	The Township of Huron-Kinloss experiences few crime-related fires, such as arson/vandalism. Between 2018 and 2022, one arson fire resulted in a no-dollar loss. There are several undetermined fires each year, some of which might be crime-related due to the economic downturn. Six (6) of the eleven (11) structure fires in 2022 were deemed undetermined in origin and cause. • The Fire Chief is the only HKFES member trained and certified in NFPA 1033, the standard for fire investigations. • The Fire Chief should also be certified in NFPA 921, *Guide for Fire and Explosion Investigations*. • District and Deputy District Chiefs should also be trained and certified in NFPAs 921 and 1033. • Include fire cause determination in the department's Officer Training program.
Service Industry Workers & Migrant Workers	Some students and international workers may move into the area during the summer months for employment. Migrant workers are often brought into Canada to aid farmers who grow fruits and vegetables. • They may lack a fire escape plan at their place of residency. • They may not be familiar with fire safety features in their building. • Residents may not be familiar with shelter-in-place procedures. • They may require public education on safe cooking practices. • There could be language barriers.

Identified Demographic Group	Issues/ Concern
	• 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.

Indigenous Community	The Township of Huron-Kinloss is on the Ojibway people's traditional lands, including the people of Chippewa's of Nawash Unceded First Nation and Saugeen First Nation #29.
	• 125 Indigenous people were living in the Township of Huron-Kinloss in 2021. Most of these are First Nations.
	• A Statistics Canada survey has identified the following:
	  ○ The Indigenous population in Canada is five times more likely to die from fire than the general population, and the risk increases to 10 times if they live on a reserve and 17 times if they are Inuit[52]. The problem may, in some cases, be due to social determinants such as poverty, inadequate housing, and the lack of working smoke alarms.
	  ○ The fire-related death rate for First Nations people living on the reserve was 3.2 per 100,000 person-years. This figure is over ten times the rate of 0.3 among non-Indigenous people.
	  ○ The CO death rate is 0.5 for First Nations, 0.7 for Métis, and 0.6 for Inuit people per 100,000 person-years, similar to 0.6 among non-Indigenous people.
	Note: *'person-years' is a measurement that accounts for the number of people involved in a study and the time spent by each person.*
	  ○ Indigenous males statistically suffer more fire-related deaths than Indigenous women.
	• Provide pamphlets in their respective dialects if a language barrier exists. If required, contact the OFM to see if they have any available; failing that, discuss with an Indigenous community fire department where HKFES may obtain the literature.
	• Indigenous groups may conduct sacred fires to heal, bond, and begin sacred ceremonies, events, and rituals.

[52] Len Garis and Mandy Desautels. "Fire Risk for Indigenous People." Firefighting in Canada. Accessed June 19, 2023. https://www.firefightingincanada.com/fire-risk-for-indigenous-people/

Identified Demographic Group	Issues/ Concern
	○ A firekeeper is responsible for the fire and must remain with it until extinguished. ○ A sacred fire is integral to Indigenous spirituality and communication with the spirit realm and ancestors. • The Township may wish to dedicate a location where the Indigenous community may gather and conduct a sacred fire event. • To ensure fire safety, the HKFES should inspect the site annually to ensure fire safety while recognizing the right of Indigenous people to hold an open-air burning event for spiritual purposes.
Senior Population	In 2021, approximately 2,600 seniors lived in the community aged 60 and older. • The projected percentage of the senior population within the County of Bruce in 2046 is between 22% and 27%. • Forecasts indicate that the County of Bruce's senior population will grow between 35% and 50% between 2021 and 2046[54]. • There are six senior vulnerable sector occupancies in the municipality at this time, and there could be additional ones in the future. • Some of the seniors have mobility and cognitive/ 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.

[54] Ontario population projections, Accessed June 19, 2023, https://www.ontario.ca/page/ontario-population-projections

Identified Demographic Group	Issues/ Concern
Seasonal Visitors	Huron-Kinloss has four main beaches: Point Clark Beach, Lurgan Beach, Bruce Beach, and Boiler Beach. The Point Clark Lighthouse is one of the primary attractions. • 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. • Research if communication cards that comprise emergency-associated phrases are available. • Lack of knowledge of escape routes from buildings • Lack of knowledge regarding shelter-in-place procedures. • May reside in a short-term rental that lacks fire safety measures. • Some may not know their location and have difficulty communicating when calling 9-1-1. • Marine emergencies may be due to some individuals lacking training in boat operations and experience (i.e., not knowing the waterway, water depths, and submersed rocks/logs). • There are five campgrounds with over 1,000 sites available. A yearly priority for the HKFES should be public education events for staff, such as fire safety around firepits, and fireworks, training on operating a fire extinguisher, information required when calling 9-1-1, etc. • Enforce the need for working smoke alarms in locations with sleeping quarters, including trailers.

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. The following list of hazards is not in order of risk level.*

Hazard Profile Risks

The following is a list of hazards to the Township of Huron-Kinloss. Evaluating each hazard based on its probability of occurrence and subsequent consequences determines its assigned risk level.

Note: *The list of hazards is the same as the Township of Huron-Kinloss' HIRA, but not the assigned level of Probability or Consequence. The Township rated each threat on the list as a very low level of risk.*

Identified Hazard	Probability	Consequence	Assigned Risk Level
Ice storm • Power Outages • Communication Disruptions • Delayed Access to Resources	Likely	Minor	Moderate
Flooding Based on the types or causes: ***Riverine*** *– Related to, formed by, or resembling a river.*[56]	Possible	Moderate	Moderate

[56] Riverine - adjective, Merriam-Webster Dictionary, Accessed July 31, 2023, https://www.merriam-webster.com/dictionary/riverine

Identified Hazard	Probability	Consequence	Assigned Risk Level
Seiche *– An oscillation of the surface of a landlocked body of water (such as a lake) that varies in period from a few minutes to several hours.*[57] ***Storm Surge*** *– A rising of the sea due to atmospheric pressure changes and wind associated with a storm.*[58] ***Resulting in:*** • Obstructed access • Increased 911 calls • Increase in Emergency Services			
Extreme Temperatures – Heat • Risk of brownouts • Increased heat-related medical calls. • Impose water restrictions during dry spells.	Likely	Minor	Moderate
Extreme Temperatures – Cold • Infrastructure failure due to frozen water mains.	Likely	Minor	Moderate
Wildland Urban-Interface Fires • Grass/field/brush fires • Forest fires	Likely	Moderate	Moderate

[57] Seiche – noun, Merriam-Webster Dictionary, July 31, 2023, https://www.merriam-webster.com/dictionary/seiche

[58] storm surge meaning - Search (bing.com), Accessed June 7, 2023, https://www.bing.com/search?q=storm+surge+meaning&qs=n&form=QBRE&sp=-1&lq=0&pq=storm+surge+meaning&sc=10-19&sk=&cvid=E9A902FBAE884C419800DF1F2B4B7178&ghsh=0&ghacc=0&ghpl=

Identified Hazard	Probability	Consequence	Assigned Risk Level
Utility Disruption • A mechanical failure usually causes the loss of power supply or is otherwise by a human error.	Almost Certain	Minor	Moderate
Communications Disruption • Unexpected and simultaneous processes of interruption from the status quo.	Likely	Moderate	Moderate
Snowstorm/ Blizzard/ Hail	Likely	Moderate	Moderate
Severe Wind Event – Tornado	Possible	Major	Moderate
Severe Wind – Non-Tornado	Likely	Major	High
Extreme Downburst • Strong downward and outward winds. ○ They are called straight-line winds.	Possible	Moderate	Moderate
Storm Surge • High winds cause the abnormal rise in seawater level during a storm, measured as the height of the water above the normal predicted astronomical tide.	Possible	Moderate	Moderate
Drought – Low Water	Unlikely	Moderate	Moderate

Identified Hazard	Probability	Consequence	Assigned Risk Level
Climate Change • The root causes of climate change are natural and human reasons, climate forcers, and greenhouse gas caused by fossil fuel usage/reliance. • Resultant effects include severe weather events, depletion of the ozone layer, increased frequency of extreme temperatures, loss of sea ice, glaciers and ice sheets melting, higher sea levels, and increased severe weather damage, (i.e., more frequent tornadoes, in non-traditional regions.	Almost Certain	Major	High
Potable Water Emergency – Wells • Wells go dry due to high heat. • Risk to livestock due to lack of water.	Possible	Moderate	Moderate
Potable Water – Municipal Water System - Failure, HAZMAT, Sabotage, Terrorism	Unlikely	Moderate	Moderate
Waste-Water Treatment Plant – The disruption of service caused by infrastructure failure, HAZMAT incident, sabotage, terrorism	Unlikely	Moderate	Moderate
Emergency Water Supply • The supply of bottled water becomes required due to an infrastructure failure or domestic terrorism. • This risk includes the availability of bottled water in the supply chain.	Unlikely	Minor	Low

Identified Hazard	Probability	Consequence	Assigned Risk Level
Food • The shortage of food caused by food chain disruption, crop infestations, labour disruptions, etc.	Rare	Minor	Low
Food Contamination • When foods are spoiled or tainted because they contain microorganisms, such as bacteria or parasites, or toxic substances that make them unfit for consumption.	Rare	Minor	Low
Critical Infrastructure Failure – Continuity of Government	Unlikely	Major	Moderate
Public Transit Disruption – Saugeen Mobility and Regional Transit	Possible	Moderate	Moderate
Influenza Outbreak	Possible	Moderate	Moderate
Road Incident – Mass Casualty	Likely	Moderate	Moderate
Cyber Attack on Municipal Servers • Frequent attacks on municipal servers. • The resultant effects on the servers of the attacks could negatively impact operations for weeks. • Having firewalls and defence protection in place beforehand reduces the risk of significant damage or files held for ransom.	Likely	Moderate	Moderate

Identified Hazard	Probability	Consequence	Assigned Risk Level
Earthquake • Relative seismic hazard is low. • It may have mild earth tremors.	Rare	Insignificant	Low
Avalanche	Rare	Insignificant	Low
Severe Thunderstorm	Almost Certain	Minor	Moderate
Erosion	Possible	Minor	Moderate
Large Fire/Explosion	Likely	Moderate	Moderate
High Angle Rescue • Wind turbines • Workers are stranded on platforms when working on the sides of higher structures.	Unlikely	Moderate	Moderate
Trench Rescue	Unlikely	Moderate	Moderate
Open Pit Quarry/Mining Accident • No pits or quarries in the municipality	Possible	Moderate	Moderate
Special Events (e.g., Fire Scene Crowd Control, Stage/Viewing Stands Collapse)	Possible	Major	Moderate
Mail Delivery	Rare	Minor	Low
Train Derailment – Hazardous Materials	Not Applicable	Not Applicable	Not Applicable
Train Derailment	Not Applicable	Not Applicable	Not Applicable

Identified Hazard	Probability	Consequence	Assigned Risk Level
Civil Disorder – Riots, labour disputes, sports team wins/losses, etc.	Possible	Minor	Moderate
Active Threat • When one or more persons seek out a target-rich environment and participate in a random or systematic infliction of death or grievous bodily harm (mass shooting)	Possible	Major	Moderate
Motor Vehicle Collisions	Almost Certain	Minor	Moderate
Aviation Emergency • Crash	Unlikely	Catastrophic	Moderate
Terrorism and Sabotage • Hostage Taking • Chemical Attack • Critical Infrastructure Attack	Rare	Major	Moderate
LPG, Natural Gas, Oil, Gasoline/Methane Emergencies • Transmission lines • Storage • Distribution • Methane Landfill Site	Possible	Moderate	Moderate
Chemical • Terrorist attack-related incidents	Unlikely	Moderate	Moderate
Petroleum Product • Shortage	Possible	Major	Moderate
HAZMAT Incident – Fixed Location	Possible	Major	Moderate

Identified Hazard	Probability	Consequence	Assigned Risk Level
HAZMAT Incident – Transportation	Possible	Major	Moderate
Hurricane	Rare	Insignificant	Low
Structural Collapse	Unlikely	Major	Moderate
International Emergency • War on Canadian soil	Rare	Catastrophic	Moderate
Fog • Poor Visibility	Likely	Moderate	Moderate
Radioactive/Nuclear Emergency	Possible	Catastrophic	High
Dam Failure	Unlikely	Minor	Low
Human Health – Epidemic • Multiple causes and types	Possible	Moderate	Moderate
Human Health – Pandemic	Likely	Catastrophic	High
Infectious Disease • While infectious, not as a significant risk to health and life as epidemics and pandemics.	Possible	Moderate	Moderate
Medical Supply Disruption	Possible	Moderate	Moderate

Identified Hazard	Probability	Consequence	Assigned Risk Level
Substance Abuse • Opioid overdose • As an example of the opioid epidemic, Essex-Windsor had to declare an emergency in the past due to high rates of incidents over a short period. • Most overdoses involve the use of fentanyl[59]	Likely	Catastrophic	High
Plant Disease and Pest Infestation	Rare	Minor	Low
Farm Animal Disease	Rare	Minor	Low
Geometric Storm • Solar Flares	Rare	Insignificant	Low
Electromagnetic Impulse • Produced anywhere electricity is used. • Impulses come from power lines, cellphones, microwaves, Wi-Fi routers, computers, and other appliances that send invisible energy waves.	Rare	Insignificant	Low

[59] "Fentanyl Facts", CDC, Accessed August 6, 2023, https://www.cdc.gov/stopoverdose/fentanyl/index.html

Identified Hazard	Probability	Consequence	Assigned Risk Level
Landslide • Ground movement includes rockfalls, shallow or deep-seated slope failures, mudflows, and debris flows. • Caused by gravity. • Triggered by rainfall, earthquakes, slope cuts for new roads, anywhere sloped earth is disturbed.	Rare	Insignificant	Low
Natural Space Object Crash	Rare	Insignificant	Low
Human-Made Space Object Crash	Rare	Insignificant	Low
Transportation Emergency – Marine	Possible	Major	Moderate
Subsidence • The downward vertical movement of the Earth's surface, which both natural processes and human activities can cause.	Rare	Minor	Low
Loss of skills • Staff turnover • Group lottery win	Unlikely	Insignificant	Low
Business Bankruptcy • COVID-19 Pandemic	Possible	Moderate	Moderate
Geopolitical Pressures • War (e.g., Ukraine) • Economic downturn • Supply chain shortages • After-effects of COVID-19.	Rare	Insignificant	Low

Identified Hazard	Probability	Consequence	Assigned Risk Level
Workplace Strike • Labour Disruption	Possible	Minor	Moderate
Criminal Activity • Vandalism • Security Breach	Possible	Moderate	Moderate
Workplace Violence	Possible	Moderate	Moderate
Health and Safety Incidents	Likely	Minor	Moderate
Forest Fire – Evacuees	Rare	Insignificant	Low
Hunting Incidents • Accidental gun or archery wounds • Hunters are falling from tree stands. • Severe lacerations while dressing wildlife	Possible	Moderate	Moderate

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 with or able to 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 Township of Huron-Kinloss area and the types of incidents they may attend.

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
Ontario Provincial Police – South Bruce Detachment in Kincardine and Walkerton	• 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 (MUSAR) • 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 • CBRNE support team	• OPP resources have a large geographical area to cover.

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
	• Tornadoes • Severe weather events • Explosions		
Royal Canadian Mounted Police (RCMP)	• 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

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
Bruce County Paramedic Services (BCPS)	• Medical calls • Fire standby • Acts of violence • Acts of terrorism • Mass casualty • Any time the ERP is implemented and 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 response agreement was last reviewed and updated in 2018. • Discuss with BCPS having a cyanokit available and administering 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	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
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 HKFES' Incident Commander. • HKFES has one automatic aid agreement with the Municipality of Kincardine for fire protection services in Huron-Kinloss. • HKFES is a member department of the Bruce County Mutual and Aid Plan.	• Having been updated in 2022, the Bruce County Mutual and Plan is current. • Any automatic aid or response agreements should meet the needs and circumstances of the residents living in the response area of that agreement.
Canada Border Services Agency (CBSA)	• 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 that 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

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
St. John Ambulance – 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
Canadian Red Cross – Grey and Bruce Counties.	• Public events in which many people are in attendance. • Attend major incidents where people have become displaced from their homes	• Supporting HKFES at public events and extreme disasters. • Sheltering and connecting family members. • Provide emergency and disaster services (e.g., temporary shelter, food, clothing).	• The Waterloo-Wellington Regional Office coordinates activities in Grey-Bruce.
Ontario Fire Marshal	• Suspicious fires • Attend fires in which there is either 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, CBRNE	• Investigation – Lead agency working in conjunction with the police. • Provide technical support	None Known

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
	• Emergency Preparedness and Response Unit (EPRU) • Support communities when local resources are exhausted. • Maintains command and control and is responsible for the results management of the incident.		
Emergency Management Ontario – Heavy Urban Search and Rescue (HUSAR)	• 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 and Winnipeg. • The OPP maintains the only Medium USAR team in the province. They are also known as USAR CBRNE Response Team (UCRT). • A light USAR is available from Windsor and Ottawa.
Ministry of Natural Resources and Forestry	• Forest fires • Flooding • Mining incidents • Dam failures • Erosion and unstable land	• Responsible for Crown Lands belonging to the province. • Coordinate the response of resources to suppress and extinguish forest fires. • Coordinate evacuations if	None Known

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
	• Responsible for provincial parks • Land and wildlife management • Lands and waters management	required. • Manage, monitor and, in some cases, control flood waters. • Coordinate mine rescue teams	
Transport Canada	• Respond to transportation accidents involving some road vehicles and all rails, marine, and aviation incidents.	• Take the lead investigation 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

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
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. • Aid in evacuations during wildfire season and flooding in the spring.	• 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
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. • Remove and treat injured persons. • May direct other resources to the incident location.	None Known

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
Huron and Area Search and Rescue – Zurich *HASAR is an all volunteer not for profit professional Search and Rescue organization and part of the Canadian Coast Guard Auxiliary.*	• Respond to lost or missing individuals.	• Conduct search and rescue operations under the direction of the OPP. • Provide first aid to injured persons.	None Known
Canadian Coast Guard *Sarnia – Regional Headquarters* *Station in Goderich*	• Responsible for marine safety and the environmental protection of aquatic life and waters. • Maritime Search and Rescue • Navigational or transportation emergencies in Canadian waters • Ice breaking to free vessels. • Maritime HAZMAT/ pollution emergencies	• Perform search and rescue. • Respond to vessels in distress. • Respond to medical emergencies. • Respond to support local emergency services. • Collaborate with other government agencies. • Issue warnings about navigational emergencies • Provide marine security	None Known

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
United States Coast Guard (USCG) *Numerous Stations located in the State of Michigan* *Air Stations located in Traverse City and Detroit, Michigan* ***Note:*** *Contact with USCG will be under rare circumstances.*	• Maritime Search and Rescue • Navigational or transportation emergencies in United States waters • Ice breaking to free vessels. • Maritime HAZMAT/ pollution emergencies • Terrorism and the smuggling of goods into the United States • Natural disasters on the waterways	• Perform search and rescue. • Respond to vessels in distress. • Respond to medical emergencies. • Respond to support local emergency services. • Collaborate with other government agencies. • Issue warnings about navigational emergencies • Provide marine security	None Known
Huron-Kinloss Fire & Emergency Services	• Fires • MVCs • Technical rescues • Ice and Water – Awareness Level • Low and High-Angle rope – Awareness Level • Confined space – Awareness Level • Trench Rescue – Awareness Level • Elevator Rescue – Awareness Level	• Suppress and extinguish fires • Fire cause determination • Perform rescues • Property conservation • Vehicle extrication • Assist other emergency response agencies • Assist with evacuations.	• HKFES has not acquired its superior tanker shuttle accreditation. • HKFES does not have large-capacity tankers. • Lack of firefighters available during the daytime hours. • HKFES lacks a dedicated PFLSE.

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
	• Marine emergencies – HKFES does not have a vessel for complicated marine rescues in rough water or further out in Lake Huron. • HAZMAT incidents – Awareness Level (train to operations level) • Flooding – only in extreme cases in which life safety is at risk.		• A contingency plan for mitigating technical rescues with another fire service or a third party should exist. • Add to the Fees By-law provisions for full-cost recovery when attending technical rescues. • Should consider acquiring a multi-purpose UTV with tracks for fighting wildland fires and transporting injured persons.

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their 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. • CO 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
EPCOR	• CO alarms • Natural gas leaks in residences • Leaks within their infrastructure	• Coordinate response with HKFES. • Responsible for making areas safe that involve gas leaks. • 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	• Assist with fire investigations. • Electrical code enforcement	None Known
Hydro One Power Distribution Inc. and Westario	• Downed power lines • Severe weather events • Structure fires	• Terminate power supply on transmission systems as needed. • Reinstate the power supply as	None Known

Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role during the Incident	Issues and Concerns
Power Inc. (Lucknow and Ripley)	• Incidents requiring the disconnecting of the power	required.	
Saugeen Valley Conservation Authority Maitland Valley 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 (NGO) 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.

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
Township of Huron-Kinloss – *Community Emergency Management Coordinator*	• Assist residents during emergency evacuations. • Arrange buses for temporary shelter.	None Known
County of Bruce Human Services *Services provided include:* • *Business and Human Services Integration* • *Children's Services* • *Housing Facilities and Services* • *Income and Support Services* • *Strategic Community Initiatives and Funding*	• Early Years Services • It has 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
Ministry of Community and Social Services – Ontario	• Housing • Financial support	None Known
Grey Bruce 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
Home and Community Care Support Services - Formally Local Health Integration Network (LHIN) – Grey and Bruce *The office is in Owen Sound*	• 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
Bruce Grey Child and Family Services	• Responsible for the safety and well-being of children by protecting children from abuse, neglect, and other forms of maltreatment. • Counselling • Wellness groups • Housing connections	None Known

Community Service Agencies	Types of Assistance They Can Provide	Issues and Concerns
Victim Services of Bruce, Grey and Perth Counties	• 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 crisis, and sudden tragedies.	None Known
Canadian Mental Health Association of Grey Bruce	• Ongoing mental health support	None Known
Bluewater District School Board *(No Catholic Schools in Huron-Kinloss)*	• Access to the student population	None Known
Royal Canadian Legion – Lucknow Branch 309 and Ripley Branch 440	• Services in-kind • Financial support for public education programs • Facility for the delivery of fire safety programs	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.

Tourism and agriculture are significant economic contributors to the Township of Huron-Kinloss's overall fiscal position, but fire risks come with each. Fire safety information should be made available to visitors to the Township relating to the community and fire safety considerations while hiking, swimming, camping, fishing, hunting, or other activities.

The Bruce Nuclear Generating Station in Kincardine is the largest employer in the area. The local economy is prosperous between agriculture, tourism, and the Bruce Nuclear Generating Station.

No major industries are in the Township.

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 a probability, consequence, and risk levels for each risk identified. The risk level assessments are from historical data.

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

Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
Campgrounds/ Seasonal Lodging	Closure - Permanent	Unlikely	Minor	Low
	Closure - Temporary	Possible	Minor	Moderate
	Cyber Attack	Rare	Insignificant	Low
	Domestic Terrorism	Unlikely	Catastrophic	Moderate

Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
	Fire	Possible	Moderate	Moderate
	Pandemic	Possible	Moderate	Moderate
	Weather Event	Likely	Moderate	Moderate
Financial Institutions	Closure - Permanent	Unlikely	Moderate	Moderate
	Closure - Temporary	Possible	Moderate	Moderate
	Cyber Attack	Possible	Moderate	Moderate
	Domestic Terrorism	Rare	Catastrophic	Moderate
	Fire	Unlikely	Moderate	Moderate
	Natural Gas Disruption	Possible	Minor	Moderate
	Pandemic	Possible	Catastrophic	High
	Telecommunications Disruption	Possible	Moderate	Moderate
	Weather Event	Possible	Moderate	Moderate

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

Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
	Pandemic	Possible	Major	High
	Power Disruption	Possible	Minor	Moderate
	Weather Event	Possible	Moderate	Moderate
Municipality	Cyber Attack	Rare	Insignificant	Low
	Hazardous Materials Incident	Possible	Moderate	Moderate
	Pandemic	Possible	Catastrophic	High
	Weather Event	Possible	Moderate	Moderate
Municipal Operations	Ammonia Leak (Arena)	Unlikely	Moderate	Moderate
	Closure - Permanent	Rare	Insignificant	Low
	Closure - Temporary	Possible	Minor	Moderate
	Cyber Attack	Possible	Catastrophic	High
	Domestic Terrorism	Rare	Catastrophic	Moderate
	Fire	Unlikely	Major	Moderate
	Flooding	Possible	Moderate	Moderate
	Natural Gas Disruption	Possible	Minor	Moderate

Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
	Pandemic	Possible	Major	Moderate
	Power Outage	Likely	Major	High
	Road Closure of Long Duration	Possible	Moderate	Moderate
	Weather Event	Possible	Moderate	Moderate
	Wildland Fires	Unlikely	Moderate	Moderate
Restaurants/ Fast Food Outlets	Closure - Permanent	Possible	Minor	Moderate
	Closure - Temporary	Possible	Moderate	Moderate
	Cyber Attack	Possible	Catastrophic	High
	Domestic Terrorism	Rare	Catastrophic	Moderate
	Fire	Possible	Major	Moderate
	Natural Gas Disruption	Possible	Moderate	Moderate
	Pandemic	Possible	Catastrophic	High
	Power Outage	Likely	Moderate	Moderate
	Telecommunications Disruption	Unlikely	Minor	Low
	Weather Event	Possible	Minor	Moderate

Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
Schools	Closure - Permanent	Rare	Moderate	Moderate
	Closure - Temporary	Possible	Moderate	Moderate
	Cyber Attack	Unlikely	Major	Moderate
	Domestic Terrorism	Possible	Catastrophic	High
	Fire	Unlikely	Major	Moderate
	Influenza Outbreak	Possible	Moderate	Moderate
	Natural Gas Disruption	Possible	Moderate	Moderate
	Pandemic	Possible	Catastrophic	High
	Potable Water Emergency	Unlikely	Moderate	Moderate
	Power Outage	Likely	Moderate	Moderate
	Weather Event	Possible	Moderate	Moderate
Small Business	Closure - Permanent	Possible	Moderate	Moderate
	Closure - Temporary	Possible	Moderate	Moderate
	Cyber Attack	Unlikely	Major	Moderate
	Domestic Terrorism	Rare	Catastrophic	Moderate

Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
	Fire	Possible	Major	Moderate
	Natural Gas Disruption	Possible	Minor	Moderate
	Pandemic	Possible	Catastrophic	High
	Power Outage	Likely	Moderate	Moderate
	Telecommunications Disruption	Unlikely	Minor	Low
	Weather Event	Possible	Minor	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 #11: FIRE BY PROPERTY CATEGORY

		2018	2019	2020	2021	2022	2023*
Total	**Loss Fires**	**7**	**11**	**10**	**23**	**18**	**13**
	Injuries	**0**	**0**	**0**	**2**	**0**	**0**
	Fatalities	**0**	**0**	**0**	**0**	**0**	**0**
	Est $ Loss	**122,000**	**759,700**	**1,246,000**	**2,460,500**	**540,000**	**1,865,000**
	No Loss Fires	**6**	**5**	**3**	**25**	**0**	**1**
Structure with Loss	Loss Fires	4	7	6	15	11	9
	Injuries	0	0	0	2	0	0
	Fatalities	0	0	0	0	0	0
	Est $ Loss	79,000	726,700	1,071,000	1,928,000	335,000	1,660,000
	No Loss fires	1	2	0	5	0	0
Outdoor	Loss Fires	1	1	2	3	2	1
	Injuries	0	0	0	0	0	0
	Fatalities	0	0	0	0	0	0
	Est $ Loss	3,000	1,000	150,000	47,500	25,000	50,000
	No Loss Fires	0	1	1	4	0	0
Vehicle	Loss Fires	1	3	2	5	5	1
	Injuries	0	0	0	0	0	0
	Fatalities	0	0	0	0	0	0
	Est $ Loss	40,000	32,000	25,000	485,000	180,000	45,000
	No Loss Fires	1	1	0	0	0	1

		2018	2019	2020	2021	2022	2023*
No Loss – Outdoor Fires excluded	Loss Fires	0	0	0	0	0	0
	Injuries	0	0	0	0	0	0
	Fatalities	0	0	0	0	0	0
	Est $ Loss	0	0	0	0	0	0
	No Loss fires	4	1	2	16	15	16

Note: *Completion of the verification process of the 2023 data by the OFM has not occurred.*

TABLE #12: 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	1	$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	6	$1,440,000	2	0	See Below	6	$96,000	0	0	See Below	5	$1,260,000	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	1	$1,000	0	0	See Below	0	$0	0	0	n/a	0	$0	0	0	n/a
GROUP F	Industrial	1	$50,000	0	0	See Below	0	$0	0	0	n/a	0	$0	0	0	n/a
Other - Structures & Properties not Classified by OBC		1	$10,000	0	0	See Below	2	$25,000	0	0	See Below	1	$35,000	0	0	See Below
Properties Classified Under National Farm Building Code		5	$724,000	0	0	See Below	4	$214,000	0	0	See Below	3	$365,000	0	0	n/a
TOTALS		14	$2,225,000	2	0	0	12	$335,000	0	0	0	10	$1,660,000	0	0	0

***Note:** The OFM has not verified the 2023.*

Fire causes include:

- Arson
- Design/construction/maintenance deficiency
- Mechanical/electrical failure
- Misuse of ignition source/materials first ignited.
- Other unintentional
- Unintentional undetermined
- Other
- Undetermined

Ignition sources include:

- Cooking equipment
- Electrical distribution equipment
- Heating equipment, chimney, etc.
- Lighting equipment
- Open flame tools, smoker's articles
- Other electrical, mechanical
- Exposure
- Miscellaneous
- Undetermined

TABLE #13: SUMMARY OF TOTAL EMERGENCY CALLS (FIRES AND NON-FIRE CALLS)

Township of Huron-Kinloss

	Total	Loss Fire Structure	Loss Fire Other	Loss Fire Vehicle	No Loss Fire	No Loss Fire – Excluded	Non-Fire Call
2018	191	4	1	2	2	4	178
2019	262	7	1	3	4	1	246
2020	152	6	2	2	1	2	139
2021	285	15	3	5	9	16	237
2022	203	11	2	5	0	15	170
2023*	316	9	3	1	1	16	286

*Province of Ontario***

	Total	Loss Fire Structure	Loss Fire Other	Loss Fire Vehicle	No Loss Fire	No Loss Fire – Excluded	Non-Fire Call
2017	514,177	6,683	689	2,935	1,876	5,820	496,174
2018	546,337	7,012	806	3,249	2,097	7,414	525,759
2019	536,818	6,715	694	3,263	1,881	5,763	518,502
2020	450,004	6,841	837	2,921	1,954	8,248	429,203
2021	491,661	7,076	857	2,761	1,865	9,261	469,841
2022	579,343	7,482	1,010	3,106	1,943	10,064	555,738

***Note:** Completion of the verification process of the 2023 data by the OFM has not occurred.*

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

Definitions of Headings

"Loss" fire means there was a $ loss OR injuries OR fatalities reported for the fire incident (i.e., $ loss + Civ Injuries + Civ Fatalities + ff Injuries + ff Fatalities > 0)

"No Loss" fire means there was $0 loss AND 0 injuries AND 0 fatalities reported for the fire incident (i.e., $ loss + Civ Injuries + Civ Fatalities + ff Injuries + ff Fatalities = 0).

Note that at year-end, during data cleaning/consolidation:

- Standard Incident Report (SIR) $ losses under $4 will be revised to $0.
- SIR Injury counts where NO injury records are submitted will be revised to 0.
- SIR Fatality counts are compared with OFM Fire Investigations Unit and will be revised accordingly to reflect the true count of fire deaths as confirmed by the Coroner.
- SIR Response Code 3 incidents are "cleaned" to meet the criteria for the use of this code as outlined in the Manual (i.e., fire occurred outdoors with $0 & 0 injury/death).

Total – Is the total of all calls dispatched to HKFES.

Loss Fire Structure – A - Loss Fire Structure: (Response type code = 1 or 2) **AND** ($ loss + Civ Injuries + Civ Fatalities + ff Injuries + ff Fatalities > 0) AND (Property type Category = STRUCTURE)
(Response Type Code 1 – Fire)

(Response Type Code 2 – Explosion (including during fire, excluding codes 3 and 11 to 15 of SIR Codes)

Loss Fire Other – (Response type code= 1 or 2) **AND** ($ loss + Civ Injuries + Civ Fatalities + ff Injuries + ff Fatalities > 0) AND (Property type Category = OUTDOOR)

Loss Fire Vehicle – (Response type code= 1 or 2) AND ($ loss + Civ Injuries + Civ Fatalities + ff Injuries + ff Fatalities > 0) AND (Property type Category = VEHICLE)

No Loss Fire – (Response type code= 1 or 2) AND ($ loss + Civ Injuries + Civ Fatalities + ff Injuries + ff Fatalities = 0)
(Response Code 3 – No Loss Outdoor fire (see exclusions)

Non-Fire Call: (Response type code > 3 of SIR Response Type Classes)

Note: *Province of Ontario – 2022 data will not be available until late 2023. Completion of the verification process of the 2022 data by the OFM has not occurred.*

TABLE #14: OVERVIEW OF PROPERTY CLASS, INJURIES, CAUSE, IGNITION SOURCE

				2019	2020	2021	2022	2023*
Structure	Total		Loss Fires	7	6	15	11	9
			Injuries	0	0	2	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	726,700	1,071,000	1,928,000	335,000	1,660,000
			No Loss Fires	2	0	5	0	0
	Intentional	Total	Loss Fires	0	0	0	0	1
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	0	0	0	0	60,000
			No Loss Fires	0	1	0	0	0
		Arson	Loss Fires	0	0	0	0	1
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	0	0	0	0	60,000
			No Loss Fires	0	1	0	0	0
		Vandalism	Loss Fires	0	0	0	0	0
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	0	0	0	0	0
			No Loss Fires	0	0	0	0	0
	Unintentional	Total	Loss Fires	6	4	9	11	8
			Injuries	0	0	2	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	594,200	761,000	772,000	335,000	1,600,000
			No Loss Fires	2	0	4	0	0

				2019	2020	2021	2022	2023*
		Design/ Construction/ Maintenance Deficiency	Loss Fires	1	1	0	3	1
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	200	550,000	0	87,500	15,000
			No Loss Fires	1	0	1	0	0
		Mechanical/ Electrical Failure	Loss Fires	2		3	0	0
			Injuries	0		0	0	0
			Fatalities	0		0	0	0
			Est $ Loss	273,000		185,000	0	0
			No Loss Fires	1		0	0	0
		Misuse of Ignition Source/ Material First Ignited	Loss Fires	2	2	4	4	1
			Injuries	0	0	2	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	21,000	206,000	511,500	202,500	35,000
			No Loss Fires	0	0	3	0	0
		Other Unintentional	Loss Fires	1	0	1	0	1
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	300,000	0	63,000	0	150,000
			No Loss Fires	0	0	0	0	0
		Undetermined	Loss Fires	0	1	1	6	1
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	0	5,000	12,500	130,000	1,400,000
			No Loss Fires	0	0	0	0	0

				2019	2020	2021	2022	2023*
	Other	Total	Loss Fires	0	1	0	0	0
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	0	10,000	0	0	0
			No Loss Fires	0	0	0	0	0
		Other	Loss Fires	0	1	0	0	0
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	0	10,000	0	0	0
			No Loss Fires	0	0	0	0	0
Structure	Undetermined	Total	Loss Fires	1	1	6	0	0
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	132,500	300,000	1,156,000	0	0
			No Loss Fires	0	0	0	0	0
		Undetermined	Loss Fires	1	1	6	0	0
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est $ Loss	132,500	300,000	1,156,000	0	0
			No Loss Fires	0	0	0	0	0

Note: *Completion of the verification process of the 2023 data by the OFM has not occurred.*

TABLE #15: STRUCTURE FIRE CAUSES – TOWNSHIP OF HURON-KINLOSS VS. THE PROVINCE IN 2022

	Township of Huron-Kinloss		Ontario	
Fire Causes	**Number of Fires**	**Percentage of Total Fires**	**Number of Fires**	**Percentage of Total Fires**
Arson	0	0%	498	7%
Intentional Other	0	0%	2	0%
Vandalism	0	0%	121	2%
Children Playing	0	0%	33	0%
Design/ Construction / Maintenance Deficiency	3	27%	416	6%
Mechanical/ Electrical Failure	0	0%	1,100	15%
Misuse of Ignition Source/ Material First Ignited	4	36%	1,889	25%
Other Unintentional	0	0%	567	8%
Unintentional Undetermined	2	18%	710	9%
Vehicle Collision	0	0%	8	0%
Other	0	0%	414	6%
Undetermined	2	18%	1,715	23%
Unknown, not reported	0	0%	9	0%

Note: *The percentage figures indicated in TABLE #15 were obtained from OFM and did not include no-loss or vehicle fires.*

TABLE #16: FIRES BY IGNITION SOURCE

			2019	2020	2021	2022	2023*
Structure	**Total**	Loss Fires	7	6	15	11	90
		Injuries	0	0	2	0	0
		Fatalities	0	0	0	0	1,660,000
		Est $ Loss	726,700	1,071,000	1,928,000	335,000	0
		No Loss Fires	2	0	5	0	
	Appliances	Loss Fires	1	0	0	0	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est $ Loss	75,000	0	0	0	0
		No Loss Fires	1	0	0	0	0
	Cooking Equipment	Loss Fires	0	0	1	0	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est $ Loss	0	0	35,000	0	0
		No Loss Fires	0	0	0	0	0
	Electrical Distribution Equipment	Loss Fires	2	0	2	0	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est $ Loss	498,000	0	150,000	0	0
		No Loss Fires	0	0	0	0	0
	Lighting Equipment	Loss Fires	0	0	1	0	0
		Injuries	0	0	2	0	0
		Fatalities	0	0	0	0	0
		Est $ Loss	0	0	200,000	0	0
		No Loss Fires	0	0	0	0	0

			2019	2020	2021	2022	2023*
	Heating Equipment, Chimney, etc.	Loss Fires	0	1	0	1	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est $ Loss	200	50,000	0	2,500	0
		No Loss Fires	1	0	1	0	0
	Open Flame tools, smoker's articles	Loss Fires	0	1	1	2	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est $ Loss	0	156,000	1,500	27,500	0
		No Loss Fires	0	0	2	0	0
	Other Electrical and Mechanical	Loss Fires	0	1	1	0	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est $ Loss	0	50,000	300,000	0	0
		No Loss Fires	0	0	0	0	0
	Exposure	Loss Fires	0	0	0	0	1
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est $ Loss	0	0	0	0	35,000
		No Loss Fires	0	0	0	0	0
	Miscellaneous	Loss Fires	1	2	2	2	2
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est $ Loss	1,000	15,000	73,000	175,000	75,000
		No Loss Fires	0	0	0	0	0

			2019	2020	2021	2022	2023*
	Undetermined	Loss Fires	2	1	7	6	1
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est $ Loss	152,500	300,000	1,168,500	130,000	1,550,000
		No Loss Fires	0	0	0	0	0

Note: *Completion of the verification process of the 2022 data by the OFM has not occurred.*

TABLE #17: STRUCTURE FIRE IGNITION SOURCE – TOWNSHIP OF HURON-KINLOSS VS. THE PROVINCE IN 2022

	Township of Huron-Kinloss		Ontario	
Ignition Source	**Number of Fires**	**Percentage of Total Fires**	**Number of Fires**	**Percentage of Total Fires**
Appliances	0	0%	306	4%
Cooking Equipment	0	0%	1,019	14%
Electrical Distribution Equipment	0	0%	604	8%
Heating Equipment, Chimney, etc.	0	0%	518	7%
Lighting Equipment	0	0%	179	2%
Open Flame tools, smoker's articles	0	0%	1,037	14%
Other electrical/mechanical	0	0%	393	5%

	Township of Huron-Kinloss		Ontario	
Ignition Source	Number of Fires	Percentage of Total Fires	Number of Fires	Percentage of Total Fires
Processing Equipment	0	0%	78	1%
Miscellaneous	2	22%%	701	9%
Exposure	0	11%	391	5%
Undetermined	6	93%	2,256	30%
Unknown, not reported	0	0%	0	0%

Note: *The 2023 statistics for the Province of Ontario will become available in late 2024. The provincial totals may have inaccuracies due to improperly coded fire reports sent to the OFM.*

TABLE #18: NON-FIRE EMERGENCY CALLS

Non-Fire Emergency Calls*	2019		2020		2021		2022**	
	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	5	2%	3	2%	6	2%	8	4%
CO False Alarms	3	1%	0	0%	2	1%	1	0%
False Fire Calls	19	7%	14	9%	19	7%	13	6%
Medical/ Resuscitator Calls	154	59%	78	51%	92	32%	77	38%
Other Response	35	13%	24	16%	60	21%	27	13%
Overpressure Rupture/Explosion	0	0%	0	0%	0	0%	0	0%
Pre-Fire Conditions	1	0%	1	0%	4	1%	3	1%
Public Hazard	11	4%	6	4%	28	10%	13	6%
Rescue	18	7%	13	9%	26	9%	28	14%
Total of All Calls	**262**		**152**		**285**		**203**	

***Note:** Not all call types are listed. Completion of the verification process of the 2023 data by the OFM has not occurred.*

Glossary for Non-Fire Emergency Calls Table

Burning (controlled): Authorized controlled burning – complaint: open air burning/unauthorized controlled burning.

CO False Calls: CO false alarm equipment malfunction (no CO present); CO false alarm – perceived emergency (no CO present)

False Fire Calls: Alarm system equipment – accidental activation; alarm system equipment – malfunction; human accidental (alarm accidentally activated by person); human – malicious intent, prank; human – perceived emergency; other false fire call.

Medical/Resuscitator Call: Accident or illness related – cuts, fractures; person fainted etc., Alcohol or drugs related: asphyxia, respiratory condition; chest pains or suspected heart attack; cardiopulmonary resuscitation administered; defibrillator used; medical aid not required on arrival; medical/resuscitator call false alarm; medical/resuscitator call no action required; other medical/resuscitator call; oxygen administered; seizure; traumatic shock; vital signs absent; dead on arrival (DOA).

Other Responses: Assistance not required by other agency; assistance to other agencies; assistance to police; assisting another fire department; automatic aid; assist another fire department: fire; protection agreement; assist another fire department: mutual aid; assist another fire department: other call enroute; incident not found; other public service; other response.

Overpressure rupture/Explosion: Overpressure rupture (no fire, e.g., steam boilers, hot water).

Pre-Fire Conditions/No Fires: Lightning (no fire); other – cooking/toasting/smoke/steam; other pre-fire conditions (no fire); overheat (no fire, e.g., engines, mechanical devices).

Public Hazards: CO incident, CO present (e.g., false alarms); gas leak – miscellaneous; gas leak – natural gas; gas leak – propane; another public hazard; powerlines down, arching, public hazard call – false alarm; public hazard – no action required; ruptures water, steam pipe; spill – gasoline or fuel; spill – miscellaneous; spill – toxic chemical.

Rescues: Animal rescue; building collapse; commercial/industrial accident; home/residential accident; low angle rescue (non fire); other rescue; persons trapped in elevator; rescue false alarm; rescue no action required; vehicle collision; vehicle extrication.

TABLE #19: EMERGENCY RESPONSES BY STATION

Station	Fire Calls 2019	Fire Calls 2020	Fire Calls 2021	Council Approved Staffing Compliment	Current Staffing Levels
Lucknow	223	102	93	26	26 (includes 1 District Chief, 1 Deputy District Chief, 4 Captains, 2 Training Officers, 16 Firefighters and 2 Auxiliary Firefighters)
Ripley	63	73	105	26	26 (includes 1 District Chief, 1 Deputy District Chief, 4 Captains, 2 Training Officers, 16 Firefighters and 2 Auxiliary Firefighters)
Total*	**262**	**152**	**285**	**52**	**52**

Note: *Statistical totals are from OFM data; multiple fire stations were sometimes dispatched to the same call. The 2023 data is from the OFM as it is still to be verified.*

****Note:*** *Responses were reduced during the pandemic as persons worked from their home and less road traffic. The number of medical calls were reduced due to response protocols put in place.*

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.

Occupancy Type/ Location	Causes	Probability	Consequences	Assigned Risk Level
Group A – Assembly *HKFES had no documented loss fires in this Occupancy Classification Between 2017 and 2022.*	Any of the following may cause a fire: • Arson • Design/ Construction/ • Mechanical/ Electrical Failure • Misuse of ignition source/ materials first ignited. • Other Unintentional • Unintentional Undetermined • Other • Undetermined	Rare	Insignificant	Low

Occupancy Type/ Location	Causes	Probability	Consequences	Assigned Risk Level
Group B – Care and Detention *HKFES had no documented loss fires in this Occupancy Classification Between 2017 and 2022.*	Any of the following may cause a fire: • Arson • Design/ Construction/ • Mechanical/ Electrical Failure • Misuse of ignition source/ materials first ignited. • Other Unintentional • Unintentional Undetermined • Other • Undetermined	Rare	Insignificant	Low
Group C – Residential *Between 2017 and 2022, there were 28 residential fires.*	Any of the following may cause a fire: • Arson • Design/ Construction/ • Mechanical/ Electrical Failure • Misuse of ignition source/ materials first ignited. • Other Unintentional • Unintentional Undetermined • Other • Undetermined	Almost Certain	Major	High

Occupancy Type/ Location	Causes	Probability	Consequences	Assigned Risk Level
Group D – Business and Personal Services *HKFES had no documented loss fires in this Occupancy Classification Between 2017 and 2022.*	Any of the following may cause a fire: • Arson • Design/ Construction/ • Mechanical/ Electrical Failure • Misuse of ignition source/ materials first ignited. • Other Unintentional • Unintentional Undetermined • Other • Undetermined	Rare	Insignificant	Low
Group E – Mercantile *HKFES had no documented loss fires in this Occupancy Classification Between 2017 and 2022.*	Any of the following may cause a fire: • Arson • Design/ Construction/ • Mechanical/ Electrical Failure • Misuse of ignition source/ materials first ignited. • Other Unintentional • Unintentional Undetermined • Other • Undetermined	Rare	Insignificant	Low

Occupancy Type/ Location	Causes	Probability	Consequences	Assigned Risk Level
Group F – Industrial *Between 2017 and 2022, HKFES attended three loss fires at Industrial Occupancies.*	Any of the following may cause a fire: • Arson • Design/ Construction/ • Mechanical/ Electrical Failure • Misuse of ignition source/ materials first ignited. • Other Unintentional • Unintentional Undetermined • Other • Undetermined	Possible	Moderate	Moderate
Structures /Properties not classified by the OBC *HKFES attended three loss fires in this Occupancy Classification between 2017 and 2022.*	Any of the following may cause a fire: • Arson • Design/ Construction/ • Mechanical/ Electrical Failure • Misuse of ignition source/ materials first ignited. • Other Unintentional • Unintentional Undetermined • Other • Undetermined	Possible	Minor	Moderate

Occupancy Type/ Location	Causes	Probability	Consequences	Assigned Risk Level
Classified under the National Farm Building Code *HKFES attended 11 loss fires between 2017 and 2022 in this Occupancy Classification.*	Any of the following may cause a fire: • Arson • Design/ Construction/ • Mechanical/ Electrical Failure • Misuse of ignition source/ materials first ignited. • Other Unintentional • Unintentional Undetermined • Other • Undetermined	Possible	Moderate	Moderate
HAZMAT Incidents	Includes incidents at fixed locations or during transit	Possible	Moderate	Moderate
Motor Vehicle Collisions	Increased number in the summer during the heightened tourist season Severe weather events in the winter are factors in causing more MVCs.	Likely	Moderate	Moderate
Medical Calls	Approximately 38% of HKFES' call volume in 2022 was medical-related.	Likely	Minor	Moderate

Occupancy Type/ Location	Causes	Probability	Consequences	Assigned Risk Level
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
Technical Rescues	Technical rescues include low and high angles, confined spaces, trenches, and elevators.	Rare	Minor	Low
Flooding	Flooding may occur due to extreme rain events and tidal surges from Lake Huron.	Possible	Minor	Moderate
Wildland-Urban Interface Fires	Causes range from lightning strikes to campfires inappropriately extinguished to careless smoking and unattended open-air burning.	Likely	Moderate	Moderate

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. Focus has been on the dollars lost and what the department could implement to help reduce this statistic. Some may include changes to operational matters, staffing, and resources deployment/ acquisition. 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; this is the is the property that does not need to be repaired or replaced. A statistic often forgotten during the completion of incident reports is 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 to them. 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.

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 the damage sustained from smoke or water contamination, the value should be factored into the total value saved equation.

TABLE #20: TOTAL OF PROPERTY SAVED

	Year and Value of Property Saved				
Occupancy Classification	2023	2024	2025	2026	2027
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 OBC					
Classified under the National Farm Building Code					
Total Value of Property Saved					
Number of Lives Saved					

APPENDIX M- REFERENCES

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