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A photograph of a South Huron Fire Department truck, partially obscured by a blue semi-transparent overlay. The truck is dark-colored with "SOUTH HURON FIRE DEPT." and a logo on the side. The background is a sunset sky.

# The Corporation of the Municipality of South Huron & The South Huron Fire Department

## Community Risk Assessment



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Municipality of South Huron Community Risk Assessment

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## ACRONYMS

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ABCA	Ausable Bayfield Conservation Authority
AED	Automated External Defibrillator
ATV	All-Terrain Vehicle
CACC	Central Ambulance Communications Centre
CBRNE	Chemical Biological Radiation Nuclear Explosive
CBSA	Canada Border Services Agency
CEMC	Community Emergency Management Coordinator
CERB	Central Emergency Reporting Bureau
CNR	Canadian National Railway
CO	Carbon Monoxide
CRA	Community Risk Assessment
CRRP	Community Risk Reduction Plan
EMS	Emergency Medical Services
EOC	Emergency Operations Centre
ESA	Environmentally Sensitive Area
EVP	Emergency Vehicle Pre-emption
FPO	Fire Prevention Officer
FUS	Fire Underwriters Survey
GN	Guidance Note
HAZMAT	Hazardous Materials
HCPS	Huron County Paramedic Services
HIRA	Hazard Identification Risk Assessment
HUSAR	Heavy Urban Search & Rescue
IC	Incident Commander
MUSAR	Medium Urban Search & Rescue
MVC	Motor Vehicle Collision
NAICS	North American Industry Classification System
NFPA	National Fire Protection Association
NIST	National Institute of Standards and Technology
OBC	Ontario Building Code
OFC	Ontario Fire Code
OFMEM	Office of The Fire Marshal and Emergency Management
OPP	Ontario Provincial Police
PFLSE	Public Fire Life Safety Educator
SHFD	South Huron Fire Department
SOG	Standard Operating Guidelines
SOP	Standard Operating Policy
TSSA	Technical Standards & Safety Authority
UTV	Utility Terrain Vehicle
VSA	Vital Signs Absent

# Introduction

## INTRODUCTION

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This document has been completed for The Corporation of The Municipality of South Huron and the South Huron Fire Department (SHFD) in accordance with the Office of The Fire Marshal and Emergency Management (OFMEM), Regulation 378/18, that came into effect July 1<sup>st</sup>, 2019. Part of this regulation requires that a new Community Risk Assessment (CRA) be completed every five years. The regulation also requires fire departments to review their CRA every 12 months to ensure it accurately reflects the mandatory profiles and fire and emergency risks. The completion of a CRA will allow a municipality and its fire service to make sound decisions on the level of fire protection it will provide its residents.

Risk is the measure of the probability and possibility of an event occurring that will have adverse effects on the community including the health, property, organization, environment, and/or community.

Identifying and prioritizing fire and life safety risks will provide a baseline to produce a plan to prevent and mitigate such events from occurring. It is this assessment that also directs fire services in identifying the levels of service to be provided in relation to public fire safety education, Fire Code inspections and enforcement, and emergency response in preventing and mitigating the events identified.

The CRA profile is based on nine mandatory sections that include:

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

The data worksheets for each profile are included in this document, and it is these worksheets that will assist in assigning risk levels to best treat each risk and the resources to do so. The different levels of treatment risks are:

- **Avoid the Risk** – *implementation of programs to prevent fires or emergencies from occurring.*
- **Mitigate the Risk** - *programs and initiatives implemented to reduce the probability and/or consequences of a fire or emergency.*

- **Accept the Risk** – *after identifying and prioritizing a risk, it is determined that there are no specific programs or initiatives to be implemented to address this risk.*
- **Transfer the Risk** – *the fire department has chosen to transfer the impact and/or management of the risk to another organization or body or outside agency.*

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

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

If it is found upon completion of the review within the 12-month period that no changes are required to any of the profiles or fire protection services, then a review could consist of documentation that reflects these findings.

***NOTE: Due to the confidential nature of some of the information contained within this CRA, access to this report should be discrete. Sensitive information was obtained from the municipality's list of Critical Infrastructure and the Hazard Identification & Risk Analysis (HIRA) document. This information is contained within the Critical Infrastructure and Hazard profiles.***



## Community Outreach Program

During the development of a successful Community Risk Reduction Plan, it may become evident that more could be done to engage the community at large. The OFMEM is stressing the need for fire services to enhance their public education along with the number of fire inspections completed and the enforcement of violations.

It was also noted that all fire services have had successes at some level within its daily operations. These successes should be celebrated in some form; for example, certificates, awards, recognition in front of Council or ensuring media are made aware of them so they may be shared with the citizens. These successes are not only with the Operations Division, but all divisions, be it in the form of providing first aid instruction over the phone, use of an AED that saves a life, suggestions that saves expenses, or the successful prosecution of significant fire safety violations.

The following are suggestions on engaging the community:

- Get business and/or community groups to sponsor fire safety coloring books for the children that highlight the many ethnicities of the community. Engage art classes within the school system to design them.
- Establish an “Adopt a Fire Truck” program; a community group or business supports the department financially or through services at no charge such as equipment for training in exchange for their business logo to be placed on the apparatus it adopted. This type of program would require limits to the number of sponsors per apparatus, parameters on the size of the logo, the minimum amount to be donated each year, etc.
- Attend community functions and celebrations. Permit a birthday party in the fire station for a fee which includes a fee to cover staff time to monitor the party if the station’s crew must leave for a call and other departmental expenses.
- During the summer attend a different park each week and invite the community to come out to meet the firefighters. The community could tour the trucks, conduct games for children to win fire safety prizes, have face painting, etc. Many children would enjoy getting wet on a hot evening to cool off by way of a fire hose or water coming from an aerial.
- Work with the Water Department to establish an adopt a hydrant program which have been successful in many communities. Families would adopt the hydrant in front of their residence and their responsibility is to ensure it is clear of tall grass in the summer and snow in the winter. In return the family would receive a certificate and be permitted to paint the barrel of the hydrant in a manner that reflects a theme.
- The Department with support of community groups establish a junior firefighter program. These programs are quite successful in the United States.



- Invite high school students to complete community hours to assist the Fire Prevention Division at a public education function or community event.
- In conjunction with local police and paramedic service, develop a “*Pull to the Right*” program to educate drivers on the need to pull to the right when they hear sirens. This could involve sponsorship from the local media.
- Send out questionnaires each month to a limited number of households that required the services of the fire department with questions regarding how their call was handled, having working smoke alarms, and their interactions with those that attended the call.
- Fire departments could develop an “*After the Fire*” booklet that would aid residents in understanding what the Department did to extinguish the fire such as breaching walls and ceilings, who they need to call such as insurance companies, and the process of establishing a claim, how to recover documents, etc. This too could be sponsored by local businesses and insurance companies.
- Everyone is familiar with Sparky the fire services mascot. What if a fire department were to develop their own mascot to assist Sparky at community functions? Engage the schools to design one, have fashion design classes make its costume, have a community contest to name them and have businesses sponsor the new member to the Department.
- Contact some of the ethnic or neighbourhood organizations to participate in any festival/celebrations they may have. The municipal office may have a list of these as some may require a permit.

The list is endless and hopefully some of these ideas as well as others may come to fruition to aid in enhancing the fire service’s community relations and establishes fire safety messaging in one form or another.

**FIGURE #1: Map of South Huron**





## **Dates of Review and Updates**

**DATES OF REVIEW AND UPDATES**

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Year: 2022

Profile	Issues/Concerns	Treatment of Risk	Preferred Treatment Option

Year: 2023

Profile	Issues/Concerns	Treatment of Risk	Preferred Treatment Option

Year: 2024

Profile	Issues/Concerns	Treatment of Risk	Preferred Treatment Option

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Year: 2025

Profile	Issues/Concerns	Treatment of Risk	Preferred Treatment Option

Year: 2026

Profile	Issues/Concerns	Treatment of Risk	Preferred Treatment Option



# Risk Summary

**RISK SUMMARY**

The following summary outlines the top risks to life safety and property along with the suggested means of reducing or mitigating the risks. The Fire Chief, using the Preferred Treatment Options, will put forward ideas and strategies to address the risks, including public education and Fire Code enforcement, within the level of fire service provision, and it is Council that will set the level of service. These decisions will form the basis of the Municipality of South Huron’s community risk mitigation strategies.

A thorough review coupled with sound strategic planning will reap successes in the form of fewer fires, reduced fire related injuries, lower dollar property loss through ongoing fire prevention initiatives, early warning detection systems, proactive inspections, and/or public education.

**NOTE: The following features are not identified in the order of their level of risk.**

Top Risk or Issues/Concerns	Preferred Treatment Option(s)
<b>Bodies of water</b>	<p><b>Streams and rivers within the municipality flow into Lake Huron</b></p> <ul style="list-style-type: none"> <li>• Implement water safety public education initiatives through brochures and signage near bodies of water.</li> <li>• Review water rescue requirements under present legislation, regulations, and costs.</li> <li>• SHFD provides shore-based only water/ice rescue responses.</li> <li>• Promote water safety programs through swimming organizations and other first responders such as the Ontario Provincial Police (OPP), Canadian Coast Guard, and Huron County Paramedic Services (HCPS).</li> <li>• Fire service to develop response protocols, Standard Operating Guidelines, and enhanced level of service provision if more than shore-based operations.</li> <li>• Promote seasonal safety measures for both in or on the water through signage along the shore and submissions to local media outlets.</li> <li>• Promote safety equipment that should accompany those that venture onto the ice such as whistles, wearing of flotation suits, air horns, throw ropes, etc.</li> </ul>



Top Risk or Issues/Concerns	Preferred Treatment Option(s)
	<ul style="list-style-type: none"> <li>• Morrison Dam Conservation Area Trail includes a 30-acre lake. This makes shore-based water rescue a challenge when a person is beyond reach of shore rescuers.</li> <li>• SHFD does not have the means to mitigate marine vessel fires, offshore. A plan to be put into place to mitigate this through fire service agreements or through public education.</li> </ul>
<p><b>South Huron Fire Department</b></p> <p><i>New developments will bring an increase in populous and building stock.</i></p>	<p><b>The Municipality of South Huron will see considerable growth in the coming years.</b></p> <ul style="list-style-type: none"> <li>• There are four (4) significant residential developments in Exeter along with two more in the Grand Bend and the Huron Park areas.</li> <li>• A combined total of approximately 800 to 1,000 housing units upon completion of all current and proposed residential developments, over the next 10 years.</li> <li>• Estimated population growth of approximately 4,000 residents.</li> <li>• May require additional staffing, possibly additional stations and apparatus, as additional developments are brought forward.</li> <li>• Municipality moving towards larger and higher residential structures from the current three-storey limit to six storeys.</li> <li>• Will require training for firefighters on techniques of fighting fires in higher structures.</li> <li>• Six-storey construction may be made using ordinary construction materials as per the OBC.</li> <li>• With higher structures the SHFD should review the mechanical condition of its aerial devices as both are a 2,000 model and experiencing mechanical issues resulting in extended down time.</li> <li>• The Municipality should replace both units with a single 30 m (100') aerial device to ensure reliability of its equipment and ensure the apparatus are in a state of readiness.</li> <li>• Due to the high costs of a new aerial device which could be as high as \$1.5 M, consideration should be given to looking into acquiring a good used unit that is less than 10 years old and in good mechanical condition.</li> </ul>

Top Risk or Issues/Concerns	Preferred Treatment Option(s)
	<ul style="list-style-type: none"> <li>• The municipality should avoid an aerial that originated in a city where it may have been used quite often and in deteriorating condition.</li> <li>• For the health &amp; safety of the Municipality’s firefighters, an aerial platform is recommended.</li> </ul>
<p><b>Technical Rescues – Trench/ Confined Space/ High &amp; Low Angle/ Ice Water/ Vehicle Entrapment</b></p>	<p><b>SHFD does not perform technical rescues such as confined space, trench, or low and high angle. SHFD does provide shore-based ice/water rescues. The Department attends motor vehicle collisions (MVCs) and performs auto extrications.</b></p> <ul style="list-style-type: none"> <li>• Complete technical rescue training to the Awareness Level for technical rescues.</li> <li>• Have procedures in place to call in resources to mitigate such incidents.</li> <li>• Increased risk of someone falling through the ice as more individuals have been observed on the ice.</li> <li>• The SHFD should review opportunities to enhance their level of response and training to include offshore ice and water rescue.</li> <li>• The SHFD should acquire marine vessels for both ice and water rescue.</li> <li>• This may include the acquisition of a small vessel with a motor.</li> <li>• Lambton Shore Fire Department does perform ice / water rescue but due to the time for them to muster and respond, their arrival could take up to an hour.</li> </ul>
<p><b>Weather Event</b></p> <p><i>Tornadoes</i></p>	<p><b>Tornado Events – early warning devices</b></p> <ul style="list-style-type: none"> <li>• The Municipality is situated in an area known as Tornado Alley.</li> <li>• Historical tornadic events in that region of the province each year.</li> <li>• Environment Canada issues warning via media.</li> <li>• Messages sent out via Alert Ready – Canada.</li> <li>• Some municipalities are using apps developed and operated by a third party as means of notifying community of important messaging.</li> </ul>

Top Risk or Issues/Concerns	Preferred Treatment Option(s)
	<ul style="list-style-type: none"> <li>• Municipality should consider the installation of storm sirens like other municipalities have begun doing so in Southern Ontario. Not everyone carries a cell phone and may not be aware of a pending weather event.</li> <li>• Sirens should be placed in built-up areas such as Exeter, Dashwood, and Huron Park.</li> </ul>
<p><b>Structure Fires</b></p>	<ul style="list-style-type: none"> <li>• Increased public education focusing on preventive maintenance of electrical/mechanical equipment.</li> <li>• Promote the dangers of unattended candles during festive seasons or ethnic traditions.</li> <li>• Where smoking related items is the cause of fire, continue public education programs to bring to the public’s attention the dangers of careless smoking using available statistical data.</li> <li>• Provide information on the importance of having working smoke alarms and carbon monoxide detectors in the home.</li> <li>• Continue to encourage and practice home escape plans through discussions with children during school visits.</li> <li>• For new home builds or major renovations, promote residential sprinkler systems.</li> <li>• Before the wood burning season begins, promote the need to have chimneys cleaned and inspected.</li> <li>• Take advantage of speaking engagements that include senior citizens to discuss safe cooking procedures and what to do in the event of a grease fire.</li> <li>• Work with local industry and commercial establishments on the advantages of maintaining electrical/mechanical equipment and continued good housekeeping practices.</li> <li>• Focus a home inspection program on residences furthest away from a fire station.</li> <li>• Develop plans on initiating and continuing regular fire inspections based on the frequency outlined in the Fire Underwriters Survey (FUS) inspection schedule.</li> <li>• Enforcement of Fire Code Violations.</li> <li>• Monitor both undetermined and miscellaneous fires to see if there is a trend.</li> </ul>

Top Risk or Issues/Concerns	Preferred Treatment Option(s)
	<ul style="list-style-type: none"> <li>• Work with OPP and OFMEM to come to a fire cause conclusion and address as required.</li> <li>• Develop programs so those that must complete community service may do so by assisting the fire department at community functions/public education/fire prevention related engagements.</li> <li>• Educate children on dangers of playing with smoker’s articles and what to do if their clothing catches fire.</li> <li>• Option to provide cooking fire public education to high school students in cooking classes, etc.</li> <li>• Ensuring Fire Safety Plans are current for occupancies legislated to have them on site and readily available for firefighters to acquire.</li> </ul> <p>SHFD should implement a program of developing Pre-Incident Plans in accordance with NFPA 1620 – <i>Standard for Pre-Incident Planning</i>.</p>
<p><b>South Huron Fire Department</b></p>	<p><b>In 2016 there was \$476,600 in property loss and this amount is steadily increasing. In 2017, property loss was set at \$1,264,200. In 2018, there was property loss of \$4,105,700. In 2019, loss was estimated to be at \$3,359,121. In 2020 the loss was estimated at \$4,208,002. These include structure and vehicle fires.</b></p> <ul style="list-style-type: none"> <li>• Additional training provided to fire investigators to try to reduce the number of “undetermined cause” fires.</li> <li>• Monitor high dollar loss fires to see if trends are developing.</li> </ul> <p>*Note: Undetermined fire cause – in the circumstances where all fire causes have been eliminated and the investigator is left with no hypothesis that is evidenced by facts of the investigation, the investigator must conclude that the fire cause, or specific casual factors, remains undetermined (per NFPA 921). Nevertheless, ongoing training for investigators should be in place.</p>
<p><b>Illegal Second Unit/ Apartments</b></p>	<p><b>With many students and new residents living in the municipality, there could be illegal second units and apartments.</b></p>

Top Risk or Issues/Concerns	Preferred Treatment Option(s)
	<ul style="list-style-type: none"> <li>• Second units are covered under the Ontario Building Code (OBC) and Ontario Fire Code (OFC) standards, through the <i>Strong Communities through Affordable Housing Act</i>, 2011.<sup>1</sup></li> <li>• Units are enforced under OFC Div. B., 9.8.<sup>2</sup> Inspections are taking place for those second units that have been identified.</li> <li>• Illegal units may lack basic fire safety measures.</li> <li>• Some residences may not meet OFC requirements.</li> <li>• May be operating in areas that are not zoned for that purpose.</li> <li>• Property owners may be either unaware of or do not have knowledge of fire safety requirements and their responsibilities.</li> <li>• Language barriers are possible.</li> <li>• Municipality should establish a means for people to notify the authorities of locations that may be illegally operating.</li> <li>• Conduct a public education awareness program through media outlets publicizing the risks.</li> <li>• The Municipality’s Zoning By-Law which permits second units but also identify local requirements to meet specific needs in the municipality.</li> <li>• Municipality could investigate a reporting system of notifying authorities of the location(s) of a possible illegal unit.</li> </ul>
<p><b>South Huron Fire Department</b></p>	<p><b>Continue monitoring response times to ensure compliance with NFPA 1720.</b> This includes the following:</p> <ul style="list-style-type: none"> <li>• Achieve a goal of 6 firefighters on the scene within 14 minutes 80% of the time within rural areas, which have less than 500 people/ mi<sup>2</sup> (2.6 km<sup>2</sup>).</li> <li>• Monitor the turnout and response times.</li> <li>• Continue to achieve a goal of having 4 firefighters arriving on scene of an incident in which the travel distance is greater than 8 miles within a predetermined travel time, as directed by the AHJ. Travel time is directly affected by the travel distance.</li> </ul>

<sup>1</sup> <https://www.ontario.ca/laws/statute/s11006>

<sup>2</sup> <https://www.ontario.ca/laws/regulation/070213>

**TABLE(S) #1: OFMEM Fire Statistics from 2016 to 2020**

<b>Year</b>	<b>2016</b>
Number of Structure Fires	8
Number of Firefighter Injuries	0
Number of Firefighter Deaths	0
Number of Civilian Injuries	0
Number of Civilian Deaths	0
Total Dollar Loss	\$372,100
Fire Cause Determination	<ul style="list-style-type: none"> <li>• Arson</li> <li>• Design/Construction/Maintenance Deficiency</li> <li>• Misuse of Ignition Source/Material First Ignited</li> <li>• Other Unintentional</li> </ul>

<b>Year</b>	<b>2017</b>
Number of Structure Fires	8
Number of Firefighter Injuries	0
Number of Firefighter Deaths	0
Number of Civilian Injuries	1
Number of Civilian Deaths	0
Total Dollar Loss	\$1,213,000
Fire Cause Determination(s)	<ul style="list-style-type: none"> <li>• Design/Construction/Maintenance Deficiency</li> <li>• Mechanical/Electrical Failure</li> <li>• Misuse of Ignition Source/Material First Ignited</li> <li>• Undetermined</li> </ul>

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<b>Year</b>	<b>2018</b>
Number of Structure Fires	13
Number of Firefighter Injuries	0
Number of Firefighter Deaths	0
Number of Civilian Injuries	0
Number of Civilian Deaths	0
Total Dollar Loss	\$4,084,000
Fire Cause Determination(s)	<ul style="list-style-type: none"> <li>• Arson</li> <li>• Design/Construction/Maintenance Deficiency</li> <li>• Mechanical/Electrical Failure</li> <li>• Misuse of Ignition Source/Material First Ignited</li> <li>• Undetermined</li> </ul>

<b>Year</b>	<b>2019</b>
Number of Structure Fires	8
Number of Firefighter Injuries	0
Number of Firefighter Deaths	0
Number of Civilian Injuries	0
Number of Civilian Deaths	0
Total Dollar Loss	3,180,012
Fire Cause Determination(s)	<ul style="list-style-type: none"> <li>• Design/Construction/Maintenance Deficiency</li> <li>• Mechanical/Electrical Failure</li> <li>• Misuse of Ignition Source/Material First Ignited</li> <li>• Undetermined</li> </ul>

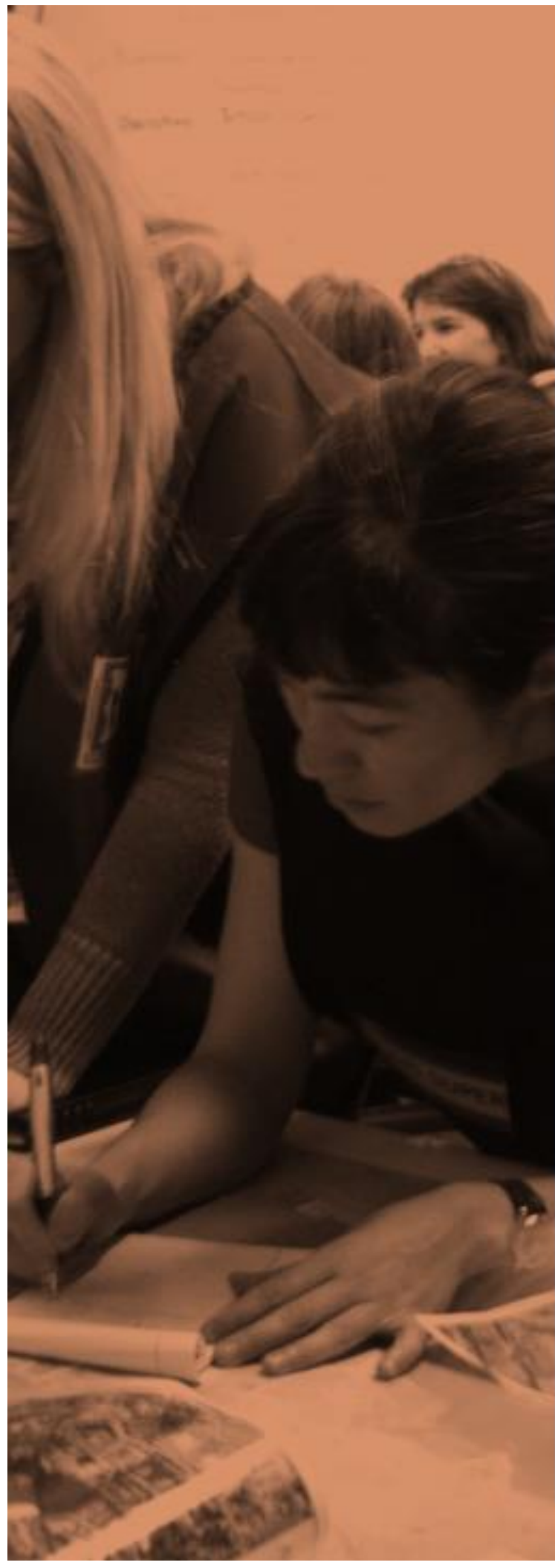


Year	2020
Number of Structure Fires	2
Number of Firefighter Injuries	0
Number of Firefighter Deaths	0
Number of Civilian Injuries	0
Number of Civilian Deaths	0
Total Dollar Loss	4,045,001
Fire Cause Determination(s)	<ul style="list-style-type: none"> <li>• Design/construction/maintenance deficiency</li> <li>• Misuse of ignition source/material first ignited</li> </ul>

**NOTE: The 2020 data is subject to change.**

The following tables represent the compilation of an in-depth analysis of the risks identified during the completion of the nine mandatory profiles. Each worksheet contains the related risks and associated information that were identified. Within each profile, the recommended level of treatment and the suggested means of handling the risks have been included (where applicable).

Council, with the assistance of the Fire Chief, will be able to use this information in the formulation of the community risk mitigation strategies.



# Profile Worksheets

## PROFILE WORKSHEETS

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### Worksheet 1: Geographic Profile

South Huron is a municipality in the southern portion of Huron County, within southern Ontario. The municipality was formed through the amalgamation of the Town of Exeter with the Townships of Stephen and Usborne in 2001. This amalgamation was imposed by the Province of Ontario as part of a province wide municipal restructuring initiative. It is in proximity to the City of London by way of Highway 4 which links up to highways 401 and 402. Its populace has seen significant decrease between 2001 and 2016 at which time numbers turned around with the influx of new residents and now continues to grow. Due to this growth, the amount of farmland within the municipality has decreased, however, the municipality remains primarily a rural area.

Being in proximity to the Great Lakes, its climate has defined seasons. January is the coldest month with an average temperature of  $-9^{\circ}\text{C}$ . January is also known to be the windiest month with an average wind speed of 24.2 km/hr. The warmest month is July with an average temperature of  $25^{\circ}\text{C}$ . The wettest month is centered around September 21<sup>st</sup> with an average total of 60 mm.<sup>3</sup> The municipality is also within Ontario's Tornado Alley and experiences severe thunderstorms during the summer with threats of tornados occurring.<sup>4</sup>

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<sup>3</sup> <https://weatherspark.com/y/18241/Average-Weather-in-South-Huron-Canada-Year-Round>

<sup>4</sup> <https://www.bing.com/search?q=where+is+tornado+alley+in+Ontario%3F&qsn&form=QBRE&sp=-1&pq=where+is+tornado+alley+in+ontario%3F&sc=0-34&sk=&cvid=37067175278E49F7B7D9E82A2B6AD4AA>

**FIGURE#2: Map of Prominent Tornado Risk Areas in Canada**



**Geographic Profile Risks**

**NOTE: The following features are not identified in the order of their level of risk.**

Geographical features in the community that influence fire protection services.

<b>Geographic Profile Risks</b>	
<b>Geographic Feature</b>	<b>Potential Impact on the Deliver of Fire Protection Services</b>
<b>Rivers and Streams</b>	<ul style="list-style-type: none"> <li>• Impacts training and equipment for response service delivery.</li> <li>• Impacts response/travel timelines to emergency calls.</li> <li>• Recreational/tourist activities impact the delivery of public fire safety messaging.</li> <li>• The river and streams may flood in the spring impacting property, infrastructure, and response times.</li> <li>• The larger tributaries flow to Lake Huron.</li> <li>• Ausable River tends to flood in the spring.</li> <li>• May be prone to ice jams in the spring.</li> <li>• SHFD has the training and equipment to aid in performing ice and water rescues from shore only.</li> </ul>

<b>Geographic Profile Risks</b>	
<b>Geographic Feature</b>	<b>Potential Impact on the Deliver of Fire Protection Services</b>
	SHFD does not have the capabilities of fighting marine vessel fires, offshore.
<b>Wetlands/Watersheds</b>	<ul style="list-style-type: none"> <li>• Impacts training, equipment for response service delivery.</li> <li>• May impact response times and travel routes to emergency calls.</li> <li>• During summer months, increased risk of drownings.</li> <li>• In the winter, snowmobiles/ice fisherman may fall through the ice as they are not familiar with the thickness of the ice or water currents under the ice.</li> <li>• Response capabilities may be hampered due to lack of access points.</li> <li>• Response capabilities are hampered where the parties involved are not familiar with their exact location.</li> <li>• Waterways may be prone to rise over their banks in the spring.</li> <li>• Hay Swamp just outside of Exeter is an 1,839-hectare, Environmentally Sensitive Area (ESA).</li> <li>• Hay Swamp drains the Ausable River and Black Creek.</li> <li>• Huron County at one time had 69,000 hectares of marshes and swamps. Of that, 53,000 hectares have been drained since pre-settlement time.<sup>5</sup></li> </ul>
<b>Provincial Highways/County Roads/Municipal Roads</b>	<ul style="list-style-type: none"> <li>• There are numerous thoroughfares and streets within the municipality.</li> <li>• Highways 4, 21 and 23 run through the municipality.</li> <li>• Highway 4 connects highways 401 and 402.</li> <li>• Huron County Road 83 is the main route used by those traveling from Toronto enroute to Grand Bend via South Huron.</li> <li>• Volumes of traffic flow across the highways and county roads each day.</li> </ul>

<sup>5</sup> [Wetlands - Huron Stewardship Council](#)

<b>Geographic Profile Risks</b>	
<b>Geographic Feature</b>	<b>Potential Impact on the Deliver of Fire Protection Services</b>
	<ul style="list-style-type: none"> <li>• High number of MVCs along the roadways.</li> <li>• Lack of fire hydrants close to highways will result in delays in setting up water supply for fighting fires that may occur.</li> <li>• Traffic congestion created by an incident on the highways can impede responding apparatus.</li> <li>• High risk of significant motor vehicle collisions (MVCs) occurring with the potential of injuries.</li> <li>• Long duration closures of highways/roads/streets will impact traffic within the municipality as detour routes are established resulting in increased traffic gridlock.</li> <li>• There is a high volume of large trucks transporting goods into and out of the area.</li> <li>• Unknown number of loads may contain hazardous materials.</li> <li>• The municipality is proactive in maintaining its road infrastructure with numerous construction projects initiated each year to improve the condition of existing streets and plan for future streets.</li> <li>• Many streets have had bike lanes added as a green initiative.</li> <li>• Traffic calming measures in subdivisions also effects response times of fire apparatus as they too must slow down to cross them. Some may also damage apparatus if crossed too quickly.</li> <li>• The use of traffic pre-emption emitters at strategic intersections to change traffic lights in the favour of fire vehicles would aid in reducing response times.</li> <li>• Increasing the number of traffic lanes to absorb the increased traffic will improve response times as there is enhanced traffic flow, less gridlock.</li> <li>• There are no plans for the installation of traffic circles in the town. If these are installed in the future, they must be of adequate size, not to impede the response of fire apparatus.</li> </ul>

Geographic Profile Risks	
Geographic Feature	Potential Impact on the Deliver of Fire Protection Services
	<ul style="list-style-type: none"> <li>• Due to significant tourism opportunities in the area during summer months, the traffic volume is significantly increased, creates delay in response of emergency services.</li> </ul>
<b>Topography</b>	<ul style="list-style-type: none"> <li>• For the purposes of this report, the general geographical coordinates of South Huron are 43.317° latitude, -81.516° longitude, and 247 m elevation.</li> <li>• The topography within three kilometres of South Huron is essentially flat, with a maximum elevation change of 26 metres and an average elevation above sea level of 250 metres. Within 16 kilometres is essentially flat (137 metres). Within 80 kilometres contains only modest variations in elevation (265 metres).</li> <li>• The area within three kilometres of South Huron is covered by cropland (67%) and grassland (20%), within 16 kilometres by cropland (70%) and grassland (14%), and within 80 kilometres by cropland (51%) and water (25%).<sup>6</sup></li> <li>• Many bicycling and walking paths throughout the municipality.</li> <li>• There are beaches available along Lake Huron’s shoreline.</li> <li>• Some paths run through ESAs.</li> <li>• The Ausable Bayfield Conservation Authority (ACBA) promotes the stewardship of green spaces such as wetlands, parks and trails, longer-term sustainability planning and climate action initiatives.</li> <li>• Numerous parks and open recreational lands for many sporting activities.</li> <li>• Municipality is primarily rural with a rich history of farming throughout.</li> <li>• Several snowmobile trails throughout the Municipality.</li> </ul>

<sup>6</sup> [Average Weather in South Huron, Canada, Year Round - Weather Spark](#)



Geographic Profile Risks	
Geographic Feature	Potential Impact on the Deliver of Fire Protection Services
	<ul style="list-style-type: none"> <li>• SHFD has sleds to transport injured parties off the trails but have no means of pulling them such as a utility terrain vehicle (UTV).</li> <li>• Firefighters become physically taxed pulling the sleds.</li> <li>• Area is well known for its hunting, fishing, snowmobiling, and hiking amenities.</li> <li>• There is a history of individuals being injured on the trails.</li> <li>• May need to carry an injured party over a mile to remove them from the trail in the summer months.</li> </ul>
<p><b>Railways</b></p>	<p><b>There is a railway running into South Huron.</b></p> <ul style="list-style-type: none"> <li>• The Goderich Exeter Railway runs from Goderich into Exeter.</li> <li>• Rail line originally ran from Goderich to London.</li> <li>• The rail line transports freight in the form of cash crops and no hazardous materials.</li> <li>• The speed limit of the trains is established at a low speed.</li> <li>• Most trains that come into South Huron move empty rail cars and leave with loaded cars.</li> <li>• There is a grain elevator beside the rail line approximately 3 km out of Exeter.</li> <li>• There is a small marshalling yard in Exeter.</li> <li>• Trains travel over a trussell which is not accessible by road, only by walking or using an all-terrain vehicle (ATV) or a UTV.</li> <li>• Requires signage at the ends of the trussell warning of the dangers of traveling along the trussell.</li> <li>• Municipality should work with the railway to install signage.</li> <li>• Risk of individuals or ATVs falling over the side of the trussell.</li> <li>• Residents take walks along the trussell and ATVs travel across it.</li> <li>• A very long walk for firefighters to transport anyone injured out of the area, over a mile.</li> <li>• SHFD should acquire a multi-purpose UTV for the transporting of injured parties out of the area.</li> </ul>

Geographic Profile Risks	
Geographic Feature	Potential Impact on the Deliver of Fire Protection Services
	<ul style="list-style-type: none"> <li>• UTV could be configured in such a manner that it could be used for wildland fires as well as secure a rescue basket on it.</li> </ul>

*Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all the information on all worksheets together to make decisions about the provision of fire protection services in their municipality/community.*

## Worksheet 2: Building Stock Profile

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

The Fire Prevention Branch should develop a means of reviewing each structure within their community in which they conduct inspections. It would be a monumental task to review every structure within a community and list them individually within this document. Prior to developing this database, decisions should be made in advance as to which occupancy classification(s) the Department will focus on based on past, history of fires in those occupancies.

The items listed in the Issues/Concerns column in Worksheet 2 are issues for consideration and are not specific to any single building. The items listed could be used as a method of identifying areas of concern within a particular occupancy.

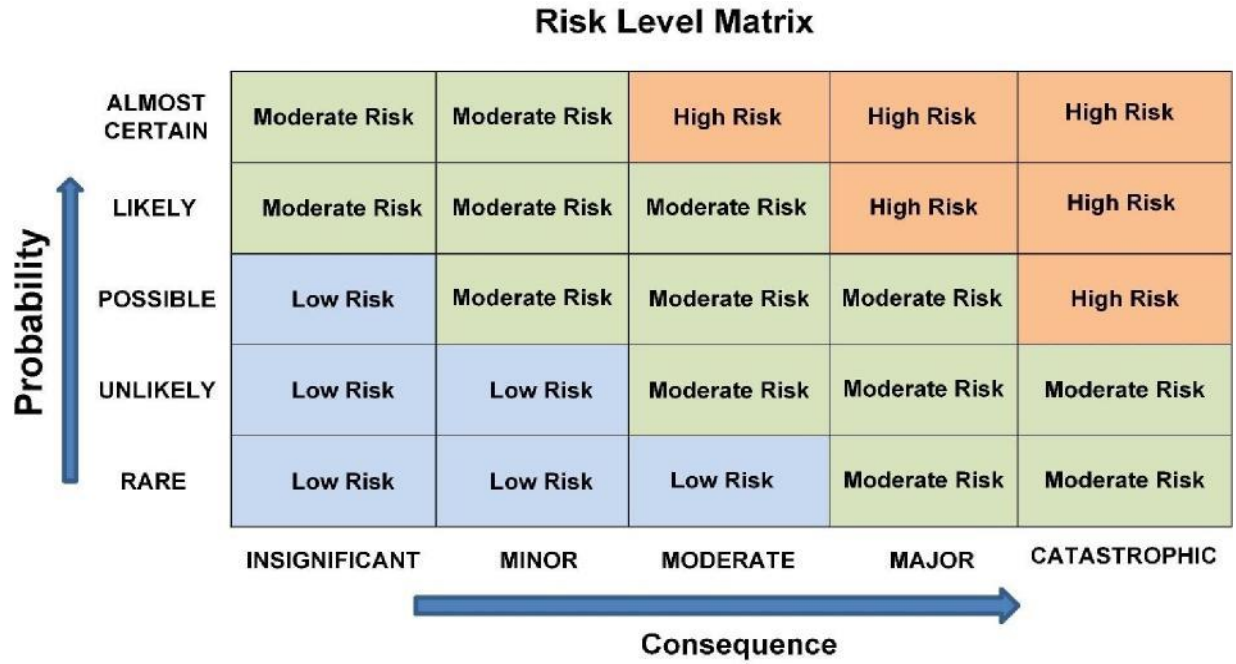
It is this data that is used in conjunction with other information from other Worksheets that may be related and the Integrated Risk Management Web tool, that will assist in the development of the city's Community Risk Reduction Plan.

### ***Assign probability, consequence, and risk levels to each.***

Assigning a risk level assists fire departments in prioritizing risks, which helps to determine how to address or treat each risk. The **Risk Level Matrix** in this section can assist fire departments to determine risk levels based on the probability and consequence levels of each identified risk. Risks can be assigned as low risk, moderate risk, or high risk. The risk levels for each risk can be noted in the **Assigned Risk Level** column on the relevant worksheets in Appendix A.

The matrix below can be used to determine the assigned risk level. Plot the assigned probability and consequence levels on the relevant worksheets in Appendix A to assign a risk level for each identified risk.

**FIGURE #3: Risk Level Matrix**



**Building Stock Profile Risks**

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

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
<b>Group A</b>	<b>Assembly</b>	<ul style="list-style-type: none"> <li>• Heavy timber construction</li> <li>• High fire load</li> <li>• High occupancy</li> <li>• Historical significance</li> <li>• Large open spaces</li> <li>• May lack fire stops and sprinklers.</li> <li>• May lack monitored fire alarm systems.</li> <li>• May, have poor housekeeping practises.</li> </ul>	Possible	Moderate	Moderate risk
<b>Group B</b>	<b>Detention Occupancies</b>	<ul style="list-style-type: none"> <li>• Restricted access</li> <li>• High occupancy load</li> <li>• Potential for violent interaction</li> <li>• Potential for civil disobedience</li> <li>• May have a maze of hallways, difficult to navigate in smoke conditions.</li> </ul>	Possible	Major	Moderate risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
<b>Group B</b>	<b>Care and Treatment/ Care</b>	<ul style="list-style-type: none"> <li>• Elderly residents with mobility and cognitive behavioral issues</li> <li>• Homes that were not required to be upgraded with sprinklers.</li> <li>• High occupancy</li> <li>• May be lacking facility staff during evening and night shifts.</li> <li>• Some facilities may not be sprinklered as not required.</li> <li>• Increased building construction for seniors indicates an increase in the aged demographic.</li> <li>• Staff may not be familiar with emergency evacuation procedures or lack practice.</li> <li>• Significant turnover of staff may mean some may be delayed in receiving emergency protocol training.</li> <li>• Staff may not be familiar on how to operate a fire extinguisher.</li> </ul>	Possible	Major	Moderate risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<ul style="list-style-type: none"> <li>• May have proprietary fire alarm systems which may result in delays notifying emergency services.</li> <li>• There are eight vulnerable occupancies in the Municipality.</li> </ul>			
<b>Group C</b>	<b>Single Family</b>	<ul style="list-style-type: none"> <li>• May be a lack of working smoke and carbon monoxide (CO) alarms.</li> <li>• May have smoke and CO alarms that are past their recommended life span.</li> <li>• May lack a home escape plan.</li> <li>• May lack fire extinguishers.</li> <li>• Often a lack of residential sprinklers.</li> <li>• Many aged structures.</li> <li>• Some older buildings may be made using balloon construction practises.</li> <li>• Hoarding or poor housekeeping practices.</li> <li>• High fire load in older structures with large support timbers.</li> </ul>	Almost certain	Major	High risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<ul style="list-style-type: none"> <li>• Lack of distance between structures – exposure risks</li> <li>• Rentals – students and transient population</li> <li>• Disarmed/removed smoke alarms.</li> <li>• This occupancy experiences most of the fires in the city.</li> <li>• Some may have small legal grow operation for marijuana.</li> <li>• Object(s) first ignited not monitored for safe operation or left unattended (e.g., candles, fireplaces, woodstoves, smoker’s articles).</li> <li>• Unidentified number of second units.</li> <li>• Increase in housing within the municipality increases demands on the fire service as a whole.</li> <li>• Detached dwellings being used as lodging for multiple students with bedrooms in basements.</li> </ul>			



Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<ul style="list-style-type: none"> <li>• Students on restrictive budgets may locate in residences that may not be legal (i.e., do not have proper exits, adequately sized basement windows, smoke alarms, CO alarms, fire extinguishers, fire escape plan, etc.).</li> <li>• May lack direct exit to the outside from basement.</li> <li>• Property owners may not understand their responsibilities regarding fire safety and fire code.</li> <li>• SHFD should assess its Fire Prevention and Enforcement resources with regards to having adequate staffing to inspect second units in the municipality.</li> <li>• SHFD should establish/ advertise a reporting method to identify possible illegal locations.</li> <li>• South Huron permits inground related dwellings (basements)</li> </ul>			

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<p>which must meet Ontario Building Code and Ontario Fire Code standards, under the <i>Strong Communities through Affordable Housing Act, 2011</i>.</p> <ul style="list-style-type: none"> <li>• The municipality approves second suites as per the Zoning By-Law 69-2018 that covers the use of second units.</li> <li>• Provincial Legislation supports the installation of second suites and to reflect local needs.</li> <li>• Two significant residential developments in progress.</li> <li>• May see the addition of approx. 800 to 1,000 residential living units in South Huron over the next 10 years.</li> <li>• Building stock growth may result in an additional 4,000 residents.</li> </ul>			

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
<b>Group C</b>	<b>Multi-unit Residential</b>	<ul style="list-style-type: none"> <li>• High occupancy</li> <li>• May lack an escape plan.</li> <li>• May be a lack of operable fire extinguishers and knowledge on their operation.</li> <li>• Hose cabinets may be vandalized.</li> <li>• May not be constructed to OBC or OFC Standards.</li> <li>• May be a lack of knowledge on where the emergency exits are located.</li> <li>• May be a lack of knowledge on shelter in place procedures.</li> <li>• Building 6-storey residential buildings in the town, which are permitted to be built out of ordinary construction materials, may lack fire stops.</li> <li>• Tenants may not respond appropriately to fire alarms due to the number of malicious false alarms.</li> </ul>	Almost certain	Major	High risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<ul style="list-style-type: none"> <li>• High-rise fires in structures will be challenging on fire service resources.</li> <li>• Fires in higher structures may necessitate specialized training for firefighters on elevator operation, ventilation systems, smoke travel, firefighter deployment, thermal/smoke column in stairways, sprinkler, and hose connections.</li> <li>• May require specialized training and additional equipment for fighting fires.</li> <li>• Fires occur above and below ground level.</li> </ul>			
<b>Group C</b>	<b>Hotel/Motel</b>	<ul style="list-style-type: none"> <li>• Transient population</li> <li>• Not familiar with the building's safety features (e.g., emergency exits, location of pull station).</li> <li>• Not familiar with location of fire extinguishers or hose cabinets.</li> </ul>	Unlikely	Moderate	Moderate risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<ul style="list-style-type: none"> <li>Numerous floors to travel up if no dedicated firefighter’s elevator.</li> <li>Include bed and breakfast facilities in this category.</li> <li>If from out of the country, may not be aware of what the fire alarm sounds like or the procedures to follow (i.e., language barriers possible).</li> <li>SHFD is not trained in conducting elevator rescues, if any are present.</li> </ul>			
<b>Group C</b>	<b>Mobile Homes &amp; Trailers</b>	<ul style="list-style-type: none"> <li>High combustibility due to construction materials.</li> <li>High fire loads and, in some cases, hoarding.</li> <li>Seasonal usage</li> <li>May lack smoke and CO alarms.</li> <li>Trailer parks with limited access routes.</li> <li>Lack of fire separation between trailers.</li> </ul>	Unlikely	Moderate	Moderate risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<ul style="list-style-type: none"> <li>Use of propane cylinders for heat and cooking may be a possible explosive hazard.</li> </ul>			
<b>Group C</b>	<b>Other</b>	<ul style="list-style-type: none"> <li>N/A</li> </ul>	N/A	N/A	N/A
<b>Groups D &amp; E</b>	<b>Business &amp; Personal</b>	<ul style="list-style-type: none"> <li>Small local business</li> <li>Possibly heavy timber construction or common basements</li> <li>Have not had any fires in this occupancy classification between 2015 and 2019</li> </ul>	Possible	Major	Moderate Risk
	<b>Service/ Mercantile</b>	<ul style="list-style-type: none"> <li>High fire loads</li> <li>Structures that are continually against each other (e.g., main street)</li> <li>May lack sprinklers.</li> <li>May lack pre-incidents plans completed by the fire department.</li> <li>Staff may not be familiar with building's services or layout.</li> <li>May, lack monitored fire alarms.</li> </ul>	Possible	Major	Moderate risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<ul style="list-style-type: none"> <li>• May be missing or vandalized fire extinguishers.</li> <li>• Have not had any fires in this occupancy classification between 2015 and 2019</li> </ul>			
<b>Group F</b>	<b>Industrial</b>	<ul style="list-style-type: none"> <li>• May lack current emergency plan for the occupancy.</li> <li>• May lack pre-incident plans by the fire department.</li> <li>• High fire loads</li> <li>• Lack of sprinklers and fire alarm systems (not required by code at time of build).</li> <li>• Lack of in-house fire brigade.</li> <li>• Lack structural fire breaks with multiple lines of manufacturing.</li> <li>• May lack access around entire building on the outside.</li> <li>• Fires involving meat / poultry processing.</li> <li>• Number of old hangers at the Huron Park aerodrome have been</li> </ul>	Possible	Major	Moderate risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		converted for commercial / industrial use. <ul style="list-style-type: none"> <li>• Regular inspections take place.</li> <li>• Buildings are sprinklered.</li> <li>• Unknown quantities of chemicals could be on-site as part of the manufacturing/refurbishing processes.</li> </ul>			
<b>Other</b>	<b>Occupancies not classified in OBC such as farm buildings</b>	<ul style="list-style-type: none"> <li>• Old construction of heavy timbers.</li> <li>• High fire loads (e.g., hay, straw, farm equipment).</li> <li>• Risk to livestock</li> <li>• The lack of fire separations in driving sheds and barns allows for fires to easily spread throughout the structure.</li> <li>• Panicked livestock</li> <li>• Inability to corral escaped livestock.</li> <li>• Life safety risk to farmers trying to save livestock or structures.</li> <li>• Lack of fire stops</li> </ul>	Possible	Major	Moderate risk



Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<ul style="list-style-type: none"> <li>Structures in proximity to each other become exposure risks.</li> <li>Poor housekeeping practices</li> <li>Many vacant abandoned structures</li> <li>Farm buildings are targets for arson or vandalism caused fires due to their lack of security, remoteness, or vacancy.</li> <li>Farm structures being used for non-intended purposes (e.g., illegal drug activity).</li> <li>Most farms lack fire safety plans.</li> <li>Lack of water supply close by for fire suppression operations.</li> </ul>			

*Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all the information on all worksheets together to make decisions about the provision of fire protection services in their municipality/community.*

**TABLE #2: Building Activities for the Years 2016 to 2020**

Occupancy of Permits	Construction Value in \$					Number of Permits per Year				
	Years	2016	2017	2018	2019	2020	2016	2017	2018	2019
Residential	7,621,461	12,896,940	14,754,357	7,765,174	31,470,572	67	90	98	117	139
Commercial	4,097,000	4,483,493	1,002,696	2,411,007	140,000	14	13	10	11	3
Industrial	5,000	2,910,000	14,583,000	4,275,000	2,465,000	1	2	5	9	4
Institutional	181,850	696,204	875,764	1,335,627	548,000	3	8	6	4	3
Agriculture	6,501,000	12,597,150	8,711,500	11,589,500	6,654,000	28	23	30	28	18
Septic Permits	--	81,000	213,200	198,000	--	12	12	18	9	13
Demolitions	105,400	148,500	243,750	30,000	25,000	10	11	10	7	5
Change of Use	--	--	--	--	--	0	0	0	0	0
Wind Turbine	--	--	--	--	--	0	0	0	0	0
<b>Totals</b>	<b>18,511,711</b>	<b>33,813,289</b>	<b>40,384,055</b>	<b>27,604,308</b>	<b>41,302,572</b>	<b>135</b>	<b>159</b>	<b>177</b>	<b>185</b>	<b>185</b>
Building Permit Fees Charged	184,958	258,397	406,898	199,652	323,594	<b>NOTE – 2020 permits include plumbing fees</b>				
Compliance Letters Fees	--	--	8,700	3,037	3,337					
Development Charges	--	--	74,987	42,282	160,413					
<b>Total</b>	<b>184,958</b>		<b>406,898</b>	<b>244,972</b>	<b>487,346</b>					

### Worksheet 3: Critical Infrastructure Profile

Consider the community’s critical infrastructure including electricity distribution, water distribution, telecommunications, hospitals, and airports and how they relate to fire and other emergency risks in the community.

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

#### Critical Infrastructure Profile Risks

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

Critical Infrastructure Profile Risks	
Identified Critical Infrastructure	Issues/Concerns/Operations
<b>Food Distribution</b>	<ul style="list-style-type: none"> <li>• Essential food supply</li> <li>• Supply broken due to power outages which could equate to commerce disrupted, labour strife.</li> <li>• Main food outlets are in Exeter.</li> </ul> <p>Should promote the installation of generators to limit food spoilage in the event of the loss of power.</p>
<b>Food and Water Inspection &amp; Monitoring</b>	<ul style="list-style-type: none"> <li>• Health inspectors</li> <li>• Inspection systems</li> <li>• Mass notification, testing, and instructions to the public</li> </ul>
<b>Water</b>	<ul style="list-style-type: none"> <li>• Municipal water supply breakdown/ disruption</li> <li>• Water contamination</li> <li>• Water is obtained from Lake Huron.</li> <li>• Large diameter water transmission mains.</li> </ul>
<b>Water Distribution within the Municipality</b>	<ul style="list-style-type: none"> <li>• Supply pipeline failure</li> <li>• Distribution systems failure</li> <li>• Pumping/booster station failure</li> <li>• Monitoring systems failure</li> <li>• Hydrants out of service</li> </ul>

<b>Critical Infrastructure Profile Risks</b>	
<b>Identified Critical Infrastructure</b>	<b>Issues/Concerns/Operations</b>
	<ul style="list-style-type: none"> <li>• Sabotage or terrorism to the pumping stations or wells</li> <li>• Above and below ground reservoirs.</li> <li>• Supply industries/facilities that require copious amounts of water to operate.</li> <li>• Water pipe failure due to age and poor quality of pipes used in the rural area.</li> <li>• System has been designed and developed in such a way to sustain continued residential and industrial/commercial growth in South Huron for many years to come</li> </ul>
<b>Water Treatment</b>	<ul style="list-style-type: none"> <li>• Chemical identification (i.e., chlorination systems)</li> <li>• Chemical storage and quantities</li> <li>• Distribution systems</li> <li>• Security of treatment plants and pumping station</li> <li>• Sabotage or terrorism</li> </ul>
<b>Wastewater and Storm Sewer Systems</b>	<ul style="list-style-type: none"> <li>• Collection systems, storm sewer management</li> <li>• Wastewater treatment facilities</li> <li>• Chemicals stored and used in process</li> <li>• Sewage lagoons</li> <li>• Numerous pumping stations for both wastewater and sewage.</li> </ul>
<b>Water Distribution</b>	<ul style="list-style-type: none"> <li>• Bottled water in bulk supply if required due to system failure.</li> <li>• Ensure the availability of large quantities on short notice, in case of an emergency.</li> </ul>
<b>Ausable Bayfield Conservation Authority - Flood Control</b>	<ul style="list-style-type: none"> <li>• Dams and spillways</li> <li>• Security at these locations</li> <li>• Flood plains</li> <li>• Monitoring procedures</li> <li>• Flood plan implementation</li> </ul>
<b>Garbage</b>	<ul style="list-style-type: none"> <li>• Debris removal and collection after severe weather event</li> </ul>

<b>Critical Infrastructure Profile Risks</b>	
<b>Identified Critical Infrastructure</b>	<b>Issues/Concerns/Operations</b>
<b>Electrical Transmission and Distribution</b>	<ul style="list-style-type: none"> <li>• Distribution lines</li> <li>• Distribution systems</li> <li>• Transformer stations</li> <li>• Emergency distribution system</li> </ul>
<b>Pharmacies</b>	<ul style="list-style-type: none"> <li>• Several pharmacies located in Exeter</li> <li>• Significant quantities of medications on location</li> <li>• May have restricted access to some areas of the building</li> </ul>
<b>Hydro One and Festival Hydro Utilities</b>	<ul style="list-style-type: none"> <li>• Distribution lines</li> <li>• Distribution system</li> <li>• Transformer stations</li> </ul>
<b>911 Communications (i.e., Central Emergency Reporting Bureau (CERB) operated by: Northern 911, located in Sudbury)</b>	<ul style="list-style-type: none"> <li>• Centre’s location</li> <li>• Main operating equipment</li> <li>• Back up equipment and location</li> <li>• Security, public safety answering point for the municipality.</li> <li>• Next-generation 9-1-1 requirements by the CRTC<sup>7</sup></li> </ul>
<b>South Huron Municipal Radio System</b>	<ul style="list-style-type: none"> <li>• Control equipment</li> <li>• Transmission site and antennae</li> <li>• Cabling, connections to dispatch centres.</li> <li>• Emergency back-up power supply</li> <li>• Radio system operates from several radio transmission tower site for two municipal departments.</li> </ul>
<b>South Huron Fire Department Radio System</b>	<ul style="list-style-type: none"> <li>• Dispatching services provided by Tillsonburg Fire Department, who also dispatches numerous other fire services in the province.</li> <li>• Operational equipment</li> <li>• Repeaters</li> <li>• Control equipment</li> <li>• Antennae</li> <li>• Cabling</li> <li>• Connections to communications centre</li> </ul>

<sup>7</sup> <https://crtc.gc.ca/eng/archive/2019/2019-66.htm>

<b>Critical Infrastructure Profile Risks</b>	
<b>Identified Critical Infrastructure</b>	<b>Issues/Concerns/Operations</b>
	<ul style="list-style-type: none"> <li>• Emergency back-up power</li> <li>• Municipality has a shared radio system with some other municipal departments</li> <li>• Transmission towers are located at two elevated water towers for the radios and another at the rear of the Dashwood Station for paging and radio transmission.</li> <li>• The radio tower behind the Dashwood Station is located on private property.</li> <li>• If a new station is built in Dashwood, the radio tower should be moved to that location.</li> <li>• Having this tower connected to the emergency stand-by generator will ensure uninterrupted radio capabilities.</li> <li>• Relocating the radio tower will be a cost-saving measure in that the lease with Bear Communications may be terminated. The FD would no longer require use of their facilities.</li> <li>• There is a lack of radio inter-operability communications between the emergency services in Huron County.</li> <li>• Due to the high risk of significant weather events, fires, or other emergencies, this means of communication should be reviewed at the earliest opportunity by the emergency services involved.</li> </ul>
<b>Central Ambulance Communications Centre (CACC), located in London</b>	<ul style="list-style-type: none"> <li>• Control equipment</li> <li>• Repeaters</li> <li>• Antennae</li> <li>• Cabling</li> <li>• Interagency Communications</li> <li>• Provincial Common Radio Frequency</li> </ul>
<b>Huron County Paramedic Services</b>	<ul style="list-style-type: none"> <li>• One base in South Huron, located in Exeter.</li> <li>• Several other bases throughout Huron County</li> <li>• May have limited supply of medications stored in facilities</li> <li>• Several vehicles assigned to Exeter Station, but only one crew is on duty.</li> </ul>

<b>Critical Infrastructure Profile Risks</b>	
<b>Identified Critical Infrastructure</b>	<b>Issues/Concerns/Operations</b>
	<ul style="list-style-type: none"> <li>Lambton County Paramedic Service has a base in Grand Bend that frequently responds to calls for assistance into South Huron.</li> </ul>
<b>Municipality of South Huron – Information Technology Services</b>	<ul style="list-style-type: none"> <li>Information technology includes servers, applications, web hosting, phone systems (cell and landline), data communications, document storage, databases</li> </ul>
<b>Telephones – Landline</b>	<ul style="list-style-type: none"> <li>Wires, towers, repeaters, sub-stations, data lines, internet, Emergency Operations Centre (EOC), and police phone systems</li> <li>Municipality of South Huron phone and data lines</li> <li>Fiberoptics</li> </ul>
<b>Telephones – Wireless</b>	<ul style="list-style-type: none"> <li>Towers, repeaters, wireless data</li> <li>Numerous providers</li> </ul>
<b>Internet Providers</b>	<ul style="list-style-type: none"> <li>Numerous internet providers service South Huron.</li> <li>Towers and infrastructure</li> </ul>
<b>Banks and Financial Institutions</b>	<ul style="list-style-type: none"> <li>Access to cash withdrawals</li> <li>Phone line breakdowns impeding commerce and financial transactions</li> <li>Located primarily in Exeter</li> </ul>
<b>Chamber of Commerce</b>	<ul style="list-style-type: none"> <li>Hub for local businesses</li> </ul>
<b>Natural Gas Transmission Systems</b>	<ul style="list-style-type: none"> <li>Regional</li> <li>Residential, commercial, and industrial supply</li> <li>Pressure control sites</li> <li>Main supply pipeline location</li> <li>Gas main infrastructure of numerous pipe sizes</li> <li>Union Gas Ltd is the main supplier</li> </ul>
<b>Oil Industry – Fuel Supply</b>	<ul style="list-style-type: none"> <li>Storage, pipelines, distribution, heating oil, locations, capacity, access protocols, system controls, security, distributions stations, back-up generators, fuel storage contingency plans, retailers</li> <li>Main storage facility contains 150,000 litres of gasoline and 292,000 litres of diesel/furnace oil</li> </ul>

Critical Infrastructure Profile Risks	
Identified Critical Infrastructure	Issues/Concerns/Operations
	<ul style="list-style-type: none"> <li>• May, lack security monitoring/personnel or fencing including barbed wire along the top</li> <li>• Catchment area in the event of spill may not be adequate to contain a large spill.</li> <li>• SHFD does not stock or carry Class B foam concentrate on any apparatus.</li> <li>• SHFD should confirm that there are large quantities of Class B foam concentrate available for SHFD’s immediate use from other fire services.</li> <li>• Many farms and industries have onsite above ground fuel storage tanks that may lack a proper catchment area.</li> </ul>
<p><b>Liquefied Petroleum Gases</b></p> <p><i>Propane</i></p>	<ul style="list-style-type: none"> <li>• Propane storage facilities could have large quantities of product on site.</li> <li>• Tank refill depots at numerous locations.</li> <li>• Large tanker trucks on roads system that bring product to refill depot tanks.</li> <li>• Homes and businesses may have on-site propane tanks for heating.</li> <li>• If leak occurs and does not dissipate easily, stays close to the ground</li> <li>• Fuel for forklifts, automobiles, and BBQs.</li> <li>• Many applications of use in residential and industrial settings.</li> <li>• May be incidents of improper transportation and storage of smaller 10 and 20 lb tanks.</li> <li>• BBQ fires involving tanks that may not have been installed properly.</li> </ul>
<p><b>Regional Public Transportation</b></p>	<ul style="list-style-type: none"> <li>• Buses</li> <li>• Fueling stations</li> <li>• Maintenance garage</li> <li>• Bus storage garage</li> <li>• Huron Shores Area Transit operates within the municipality.</li> <li>• Hub for transit is in Grand Bend</li> <li>• A new route runs from Grand Bend via Dashwood, Exeter into London.</li> </ul>



<b>Critical Infrastructure Profile Risks</b>	
<b>Identified Critical Infrastructure</b>	<b>Issues/Concerns/Operations</b>
<b>Major Highways – Highways 4, 21, &amp; 23, Huron County Road 83, main street bridge in Exeter</b>	<ul style="list-style-type: none"> <li>• High volumes of traffic all day long on weekends in the summer</li> <li>• Unknown quantities of hazardous chemicals being transported.</li> <li>• MVCs cause roads to be closed and traffic diverted through the municipality.</li> <li>• Lack water supply close by (i.e., hydrants)</li> <li>• MVC on bridge could impede fire apparatus.</li> <li>• Traffic gridlock in Exeter</li> <li>• Alternate routes available that go around Exeter</li> </ul>
<b>Railways</b>	<ul style="list-style-type: none"> <li>• There is a railway operating in the municipality.</li> <li>• Trains run from Goderich to Exeter carrying freight only; no hazardous materials.</li> <li>• Trains maintain a low speed along the line.</li> <li>• Individuals walking, motoring across the trussell that is located outside of Exeter, is a safety concern.</li> </ul>
<b>Airports</b>	<ul style="list-style-type: none"> <li>• Passenger terminals</li> <li>• Runways</li> <li>• Hangars</li> <li>• Equipment for loading baggage, freight, and passengers</li> <li>• Equipment for moving airplanes.</li> <li>• High quantities of very flammable aviation fuel</li> <li>• Regional air traffic control centre</li> <li>• Largest regional airport is in London.</li> <li>• Small airports in the area include:                             <ul style="list-style-type: none"> <li>○ Centralia/James T. Field Memorial Aerodrome</li> <li>○ Grand Bend Airport</li> <li>○ Exeter Airport</li> <li>○ Lucan Airport</li> </ul> </li> <li>• Airports handle smaller planes.</li> <li>• Fire services provided by SHFD.</li> </ul>
<b>Municipality’s Road Infrastructure</b>	<ul style="list-style-type: none"> <li>• Thoroughfares, bridges, side streets</li> <li>• High volumes of traffic during summer months</li> <li>• Long duration closures due to MVCs</li> </ul>

<b>Critical Infrastructure Profile Risks</b>	
<b>Identified Critical Infrastructure</b>	<b>Issues/Concerns/Operations</b>
	<ul style="list-style-type: none"> <li>• Traffic gridlock at times during holiday weekends in the summer months.</li> <li>• As population increases so does the traffic on the network of roads.</li> <li>• Works yards for vehicle storage/sand piles/salt supplies</li> <li>• There are currently no plans for the use of roundabouts / traffic circles, in any new residential developments.</li> </ul>
<b>Hospital &amp; Treatment Centres</b>	<ul style="list-style-type: none"> <li>• South Huron Hospital in Exeter</li> <li>• Acute care trauma centre with 24/7 emergency department</li> <li>• Critical/intensive care treatment</li> <li>• Outpatient clinics</li> <li>• Pharmaceutical locations</li> <li>• Service capabilities</li> <li>• Staffing</li> <li>• Equipment (basic and very advanced technology)</li> <li>• Patient capacity</li> <li>• Security</li> <li>• Cardiac care</li> <li>• Chemical Biological Radiation Nuclear Explosive (CBRNE) decontamination site at emergency department</li> <li>• Health educational/support services</li> <li>• Mental health</li> <li>• Obstetrics</li> <li>• Pediatrics</li> <li>• Helipad for air ambulance</li> </ul>
<b>Huron Perth Public Health Unit</b>	<ul style="list-style-type: none"> <li>• Infectious disease</li> <li>• Public health</li> <li>• Staffing</li> <li>• Mass inoculations</li> <li>• Testing</li> <li>• Inspections</li> <li>• Advice to the public</li> </ul>
<b>Canadian Blood Services</b>	<ul style="list-style-type: none"> <li>• Logistics</li> </ul>

<b>Critical Infrastructure Profile Risks</b>	
<b>Identified Critical Infrastructure</b>	<b>Issues/Concerns/Operations</b>
	<ul style="list-style-type: none"> <li>• Blood storage and distribution</li> </ul>
<b>Air Ambulance</b>	<ul style="list-style-type: none"> <li>• ORNGE air ambulance (helicopter and fixed wing aircraft)</li> <li>• Very flammable fuel</li> <li>• May carry 5 to 6 passengers at a time.</li> <li>• No landing on hospital property.</li> <li>• Helicopter may land at the location of an incident.</li> <li>• Landing pad should be constructed at the local hospital</li> <li>• Patients must be transferred to the aircraft that landed in Huron Park by land ambulance.</li> <li>• Fixed wing aircraft may land at the Centralia/James T. Field Memorial Aerodrome, dependant on the length of the runways.</li> </ul>
<b>Ontario Provincial Police (OPP)</b>	<ul style="list-style-type: none"> <li>• Equipment</li> <li>• Staffing</li> <li>• Vehicles</li> <li>• Security</li> <li>• Facilities – Huron Detachment in Clinton.</li> <li>• Should consider opening a remote office for the OPP’s use in South Huron (i.e., a small office in a municipal facility).</li> <li>• Due to length of time for an officer to respond from Clinton to South Huron, a remote office would allow for an officer to be in the immediate area.</li> <li>• Response time from Clinton to South Huron could be as long as 30 to 40 minutes.</li> <li>• Capabilities of normal staffing 24/7.</li> <li>• Integration capabilities</li> <li>• Back-up capacities</li> <li>• Support systems</li> <li>• Back-up communications centre</li> <li>• Transmission equipment</li> <li>• Radio transmission towers</li> <li>• Crisis communications plan</li> </ul>
<b>South Huron Fire Department</b>	<ul style="list-style-type: none"> <li>• Multiple locations (3 fire stations)</li> </ul>

<b>Critical Infrastructure Profile Risks</b>	
<b>Identified Critical Infrastructure</b>	<b>Issues/Concerns/Operations</b>
	<ul style="list-style-type: none"> <li>• Equipment</li> <li>• Staffing</li> <li>• Vehicles and fleet maintenance</li> <li>• Security</li> <li>• Facilities</li> <li>• Capabilities</li> <li>• Integration capabilities</li> <li>• Back-up capacities</li> <li>• Support systems</li> <li>• Transmission equipment</li> <li>• Radio transmission towers</li> <li>• Not all stations have automatic stand-by generators.</li> </ul>
<b>Municipality of South Huron - Municipal Government</b>	<ul style="list-style-type: none"> <li>• Municipal Office</li> <li>• Operations Centres</li> <li>• Community Centres</li> <li>• Continuity of Government</li> <li>• Inter/intra-agency</li> <li>• Public inquiry</li> <li>• Media relations</li> <li>• Various department locations</li> <li>• Two Emergency Operations Centres</li> <li>• Equipment</li> <li>• Staffing</li> <li>• Vehicles</li> <li>• Security</li> <li>• Facilities</li> <li>• Capabilities</li> <li>• Integration capabilities</li> <li>• Back-up capacities</li> <li>• Support systems</li> <li>• Back-up communications centre</li> <li>• Transmission equipment</li> <li>• Radio transmission tower sites</li> </ul>
<b>Provincial Resources</b>	<ul style="list-style-type: none"> <li>• Identification equipment</li> <li>• Facilities</li> <li>• Staffing</li> </ul>

<b>Critical Infrastructure Profile Risks</b>	
<b>Identified Critical Infrastructure</b>	<b>Issues/Concerns/Operations</b>
	<ul style="list-style-type: none"> <li>• Capabilities</li> <li>• Locations</li> <li>• Hazard specific emergency plans/protocols</li> <li>• Activation protocols</li> </ul>
<b>Federal Government Buildings (e.g., Canada Post)</b>	<ul style="list-style-type: none"> <li>• Multiple locations</li> <li>• Services provided at that location</li> <li>• On-site security</li> </ul>
<b>Heating, Ventilation and Air Conditioning (HVAC) units</b>	<ul style="list-style-type: none"> <li>• Cooling/heating purposes at multiple locations throughout the municipality.</li> <li>• Cooling/heating stations.</li> <li>• Residents and homeless may require temporary resting locations to get out of the elements.</li> <li>• Significant affects on working/living conditions during excessive heat events and there is a loss of power, and the occupancy does not have an automatic back-up emergency power supply</li> </ul>

*Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all the information on all worksheets together to make decisions about the provision of fire protection services in their municipality/community.*

## Worksheet 4a: Demographic Profile

Consider the characteristics of your community’s demographic profile to identify potential fire safety issues/concerns. This will help the fire department prioritize its overall risk and decisions about the provision of fire protection services. For example, traditionally older adults, young children, recent immigrants, and people with disabilities are at the highest risk of fire. Knowing if your community has a high number of people in any of these demographic groups helps your fire department prioritize your public fire safety education and Fire Code inspection and enforcement programs.

Demographic profile characteristics to consider include age, culture, education, socio-economics, transient populations, or other unique population characteristics in your community.

The following population distribution chart can assist with identifying high-risk or vulnerable demographic groups in your community.

*The data found within this profile are collated from the Government of Canada’s 2016 Census.<sup>8</sup>*

**TABLE #3: Demographic Numbers by Age**

Ages of population	# of People	% of Total Population
0-4	515	5.10%
5-9	520	5.15%
10-14	500	4.95%
15-19	510	5.05%
20-24	530	5.25%
25-29	515	5.10%
30-34	500	4.95%
35-39	470	4.65%
40-44	490	4.85%
45-49	555	5.49%
50-54	750	7.42%
55-59	830	8.22%
60-64	765	7.57%
65-69	800	7.92%
70-74	615	6.09%

<sup>8</sup> [Census Profile, 2016 Census - South Huron, Municipality \[Census subdivision\], Ontario and Ontario \[Province\] \(statcan.gc.ca\)](https://www150.statcan.gc.ca/n1/pub/92-627-x/2016001/article/14668-eng.htm)

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<b>75-79</b>	470	4.65%
<b>80-84</b>	350	3.46%
<b>85 and over</b>	425	4.21%
<b>Total Population</b>	10,095	100%

**TABLE #4: Population Distribution**

<b>Total – Distribution (%) of the population by broad age groups</b>	<b>100 %</b> 10,095	<b>Male</b> 4,880	<b>Female</b> 5,215
<b>0 to 14 years</b>	1,530	760	770
<b>15 to 64 years</b>	5,905	2,920	2,990
<b>65 years and over</b>	2,660	1,200	1,455
<b>85 years and over</b>	425	135	285
<b>Average of the population</b>	45.9	45.0	46.9
<b>Median age of the population</b>	49.6	47.9	51.0

**TABLE #5: Workforce**

<b>Total – population aged 15 years and over by labour force status</b>	<b>Total</b> 8,180	<b>Male</b> 3,930	<b>Female</b> 4,245
<b>In the labour force</b>	5,090	2,725	2,365
<b>Employed</b>	4,765	2,600	2,175
<b>Unemployed</b>	325	125	195
<b>Not in labour force</b>	3,090	1,205	1,880
<b>Participation rate</b>	62.2	69.3	55.7
<b>Employment rate</b>	58.3	66.2	51.2
<b>Unemployment rate</b>	6.4	4.6	8.2



*Note:* The numbers in the charts (above and below) are directly from Stats Canada and the numbers do not always add up as expected. Stats Canada allows for discrepancies in calculations.

**TABLE #6: Employed Labour Force by Industry Sectors**

Industry Sectors	Number Employed	Percentage
<b>Total labour force population aged 15 and over by occupation – North American Industry Classification System (NAICS) 2016</b>	5,090	100.0
<b>Occupation non-applicable</b>	90	1.76
<b>All occupations</b>	4,995	98.1
<b>Management occupations</b>	720	14.14
<b>Business, finance, and administration occupations</b>	575	11.29
<b>Natural and applied sciences and related occupations</b>	215	4.22
<b>Health occupations</b>	270	5.30
<b>Occupations in education, law and social, community and government services</b>	400	7.85
<b>Occupations in arts, culture, recreation, and sport</b>	40	0.78
<b>Sales and service occupations</b>	1,095	21.51
<b>Trades, transport and equipment operators and related occupations</b>	1,010	19.84
<b>Natural resources, agriculture, and related production occupations</b>	265	5.20
<b>Occupations in manufacturing and utilities</b>	410	8.05

Note: This is the most current data available from Stats Canada<sup>9</sup>. NAICS referred to the general nature of the business carried out in the establishment where the person worked.

<sup>9</sup> [Focus on Geography Series, 2016 Census - Census subdivision of South Huron, MU \(Ontario\) \(statcan.gc.ca\)](https://www150.statcan.gc.ca/n1/pub/92-627-x/2016001/article/00001-eng.htm)

**TABLE #7: Industry – North American Industry Classification System (NAICS) 2012**

<b>Total labour force population aged 15 years and over by industry – NAICS 2012</b>	<b>Total 50,90</b>	<b>Male 2,725</b>	<b>Female 2,365</b>
Industry – NAICS – Not Applicable	90	20	70
All industry categories	5,000	2,710	2,290
Agriculture, forestry, fishing, and hunting	630	450	180
Mining, quarrying, and oil and gas extraction	30	25	5
Utilities	35	30	5
Construction	475	460	15
Manufacturing	615	465	150
Wholesale trade	225	165	60
Retail trade	650	280	370
Transportation and warehousing	165	120	50
Information and cultural industries	60	35	35
Finance and insurance	195	65	125
Real estate and rental and leasing	60	30	30
Professional, scientific, and technical services	155	70	85
Management of companies and enterprises	0	0	0
Administrative and support, waste management and remediation services	220	115	105
Educational services	285	50	240
Health care and social assistance	480	45	435
Arts, entertainment, and recreation	60	35	25
Accommodation and food services	330	95	235

Other services	185	105	80
Public administration	145	80	65

**TABLE#8: Place of Employment**

<b>Total – Place of work status for the employed work force aged 15 years and over in private households</b>	<b>Total 4,765</b>	<b>Male 2,595</b>	<b>Female 2,170</b>
<b>Worked at home</b>	545	280	265
<b>Worked outside Canada</b>	0	0	0
<b>No fixed workplace address</b>	555	475	80
<b>Worked at usual place</b>	3,665	1,840	1,825

**TABLE #9: Breakdown of Population by Ethnicity**

<b>Total – Visible minority for the population in private households</b>	<b>Total 9,695</b>	<b>Male 4,695</b>	<b>Female 5,000</b>
<b>Total visible minority population</b>	265	130	135
<b>South Asian</b>	10	-	-
<b>Chinese</b>	60	20	40
<b>Black</b>	15	15	0
<b>Filipino</b>	30	20	10
<b>Latin American</b>	35	25	15
<b>Arab</b>	0	0	0
<b>Southeast Asian</b>	65	35	30
<b>West Asian</b>	0	0	0
<b>Korean</b>	15	5	10
<b>Japanese</b>	20	5	15
<b>Visible minority, (not identified elsewhere)</b>	10	-	-
<b>Multiple visible minorities</b>	-	-	10
<b>Not a visible minority</b>	9,435	4,565	4,865

**TABLE #10: Aboriginal Population**

<b>Total – Aboriginal identity for the population in private households</b>	<b>Total 9,695</b>	<b>Male 4,695</b>	<b>Female 5,000</b>
<b>Aboriginal Identity</b>	200	115	85
<b>Single Aboriginal Responses</b>	195	115	80
<b>First Nations (North American Indian)</b>	110	45	60
<b>Métis</b>	90	75	15
<b>Inuk (Inuit)</b>	0	0	0
<b>Multiple aboriginal responses</b>	0	0	0
<b>Aboriginal responses not included elsewhere</b>	10	0	10
<b>Non-Aboriginal identity</b>	9,495	4,575	4,920

**TABLE #11 Education**

<b>Total – Highest certificate, diploma or degree for the population aged 15 years and over in private households</b>	<b>Total</b> 8,180	<b>Male</b> 3,935	<b>Female</b> 4,250
<b>No certificate diploma or degree</b>	1,960	1,065	895
<b>Secondary (high) school diploma or equivalent certificate</b>	2,620	1,245	1,380
<b>Postsecondary certificate, diploma, or degree</b>	3,600	1,625	1,970
<b>Apprenticeship trades certificate or diploma</b>	705	495	205
<b>Trade’s certificate or diploma other than Certificate of Apprenticeship or Certificate of Qualification</b>	270	155	115
<b>Certificate of Apprenticeship or Certificate of Qualification</b>	430	340	90
<b>College, CEGEP or other non-university certificate or diploma</b>	1,970	755	1,215

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<b>Total – Highest certificate, diploma or degree for the population aged 15 years and over in private households</b>	<b>Total</b> 8,180	<b>Male</b> 3,935	<b>Female</b> 4,250
<b>University certificate or diploma below bachelor level</b>	125	45	75
<b>University certificate, diploma or degree at bachelor level or above</b>	800	320	475
<b>Bachelor’s degree</b>	590	220	370
<b>University certificate or diploma above Bachelor level</b>	50	20	30
<b>Degree in medicine, dentistry, veterinary medicine or optometry</b>	20	10	10
<b>Master’s degree</b>	125	60	65
<b>Earned doctorate</b>	15	10	5

**TABLE #12 Household Characteristics**

<b>Total – private households by tenure</b>	4,250
<b>Owner</b>	3,160
<b>Renter</b>	1,090
<b>Band housing</b>	0

<b>Total – Occupied private dwellings by condominium status</b>	4,245
<b>Condominium</b>	145
<b>Non-Condominium</b>	4,100



**TABLE #13: Socioeconomic Breakdown of Income**

<b>Total – Total income groups in 2015 for the population aged 15 years and over in private households</b>	<b>Total</b> 8,175	<b>Male</b> 3,945	<b>Female</b> 4,235
<b>Without total income</b>	145	50	95
<b>With total income</b>	8,030	3,890	4,140
<b>Percentage with total income</b>	98.2	98.6	97.8
<b>Under \$10,000 (including loss)</b>	835	320	515
<b>\$10,000 to \$19,999</b>	1,460	515	945
<b>\$20,000 to \$29,999</b>	1,360	565	790
<b>\$30,000 to \$39,999</b>	1,025	455	565
<b>\$40,000 to \$49,999</b>	990	505	485
<b>\$50,000 to \$59,999</b>	695	430	265
<b>\$60,000 to \$69,999</b>	515	325	185
<b>\$70,000 to \$79,999</b>	350	235	115
<b>\$80,000 to \$89,999</b>	205	135	75
<b>\$90,000 to \$99,999</b>	190	110	85
<b>\$100,000 and over</b>	405	290	110
<b>\$100,000 to \$149,999</b>	285	200	85
<b>\$150,000 and over</b>	115	90	30

**TABLE #14: Historical Population<sup>10</sup>**

Year 1991	Population	Percentage
Town of Exeter	4,338	42.95%
Township of Stephen	4,210	41.68%
Township of Usborne	1,552	15.36%
<b>Total Population</b>	<b>10,100</b>	<b>100%</b>
Year 1996	Population	Percentage
Town of Exeter	4,472	43.71%
Township of Stephen	4,222	41.27%
Township of Usborne	1,535	15.00%
<b>Total Population</b>	<b>10,229</b>	<b>100%</b>
Year	Population	Percentage Growth ±
<b>1991</b>	10,100	--
<b>1996</b>	10,229	+1.3%
<b>2001 (Amalgamation)</b>	10,019	-2.1%
<b>2006</b>	9,982	-0.4%
<b>2011</b>	9,945	-0.4%
<b>2016</b>	10,096	+1.5%

<sup>10</sup> [South Huron - Wikipedia](#)

**NOTE:** The following tables were acquired from the South Huron Water & Wastewater Master Plan, of 2018.

Based on present and proposed residential developments in South Huron, there could be as many as 4,000 new residents over the next ten years, which may not have been taken into consideration Water & Wastewater Master Plan.

**TABLE #15: South Huron 20 Year Projected Population Growth**

Year	Population	Decrease
2011	9,945	--
2016	9,910	35
2021	9,876	35
2026	9,841	35
2031	9,807	34
2036	9,772	34
<b>Total</b>		-173

**TABLE #16: Town of Exeter 20 Year Population Projection**

Year	Population	Increase
2011	--	--
2016	4,906	121
2021	50,30	124
2026	5,158	127
2031	5,288	131
2036	5,422	134
<b>Total</b>		+637

## Worksheet 4b: Demographic Profile

### Demographic Profile Risks

List the demographic groups of concern in your community and the fire and other emergency issues/concerns relating to each group.

**NOTE: The following features are not identified in the order of their level of risk.**

Demographic Profile Risks	
Identified Demographic Group	Issues/Concern
Visible Minority Population	<ul style="list-style-type: none"> <li>• Language barriers</li> <li>• May lack, knowledge on fire safety matters.</li> <li>• May lack fire escape plan.</li> <li>• Require multi-language-cultural fire safety brochures and signage.</li> <li>• Between 250 and 350 visible minorities in South Huron.</li> <li>• Many reside in apartment buildings.</li> <li>• May not be familiar with building fire safety systems.</li> <li>• May not be familiar with shelter in place procedures.</li> </ul>
General Population	<ul style="list-style-type: none"> <li>• Population continues to grow as more subdivisions are built.</li> <li>• Population growth estimation of approximately 4,000 + new residents between 2021 and 2031, based on current and proposed residential developments.</li> <li>• Increased population will result in an increase in fire call volume.</li> <li>• Increased drug related medical events Province wide, thus may see an increase in the number of medical calls.</li> </ul>

<b>Demographic Profile Risks</b>	
<b>Identified Demographic Group</b>	<b>Issues/Concern</b>
	<ul style="list-style-type: none"> <li>• Increase in pedestrians, cyclists, distracting drivers, and disregard for the movement of emergency vehicles.</li> <li>• With the increase of residents, there is also an increase in the number of those that may suffer from mental illness. It is noted that malicious false alarms have originated by these individuals for unknown reasons.</li> <li>• False fire calls made up 20% of the department’s calls in 2019. Up 5% from 2018.</li> <li>• Individuals with mental illness may not grasp the importance of vacating a building when a fire alarm is activated.</li> <li>• Population density is 23.4 persons per km<sup>2</sup> in 2016.</li> <li>• The population for Huron County is projected to grow between 0 – 15% between 2018 and 2046.<sup>11</sup></li> </ul>
<b>Student Population</b>	<ul style="list-style-type: none"> <li>• There might be an Influx of students each fall that leave in late spring at the end of classes.</li> <li>• Some students may move into the area during the summer months for employment in the tourism industry.</li> <li>• May lack an escape plan.</li> <li>• Attend the colleges and universities in the area.</li> <li>• May not be familiar with fire safety features in the building they are residing in.</li> <li>• May be a language barrier for those from out of the country.</li> <li>• May not be familiar with shelter in place procedures.</li> <li>• Require public education in fire safety relating to living in student residences.</li> </ul>

<sup>11</sup> [Ontario Population Projections, 2019–2046 \(gov.on.ca\)](http://www.gov.on.ca)

<b>Demographic Profile Risks</b>	
<b>Identified Demographic Group</b>	<b>Issues/Concern</b>
	<ul style="list-style-type: none"> <li>• Require public education on safe cooking practises.</li> <li>• Fire safety messaging on leaving unattended candles in their dorms.</li> <li>• May live in illegal second units or apartments.</li> </ul>
<b>Senior’s population</b>	<ul style="list-style-type: none"> <li>• There are close to 3,000 – 4,000 seniors living in the community (above age 60).</li> <li>• There are eight vulnerable sector occupancies in the municipality.</li> <li>• Some of the seniors will have mobility and cognitive/behavioural issues that may require constant care.</li> <li>• Lack of personal care workers during evenings and nights.</li> <li>• May lack, knowledge of escape routes due to mental confusion.</li> <li>• Multi-floor structures with high occupancies.</li> <li>• May not have firefighter designated elevators or emergency generators in high occupancy buildings.</li> <li>• Projected percentage of population being seniors in 2046, is between 30 – 35%.</li> <li>• It is projected that the senior’s population will see growth of between 50% - 70% between 2019 and 2046 in Huron County<sup>12</sup>.</li> </ul>
<b>Summer tourists</b>	<ul style="list-style-type: none"> <li>• Language barriers</li> <li>• Language translating services over the phone should be made available</li> <li>• Possibly enquire if language cards with emergency related phrases are available.</li> <li>• Lack knowledge of escape routes from building they are in</li> <li>• Lack of knowledge of shelter in place procedures</li> </ul>

<sup>12</sup> [Ontario Population Projections, 2019–2046 \(gov.on.ca\)](http://www.gov.on.ca)

Demographic Profile Risks	
Identified Demographic Group	Issues/Concern
	<ul style="list-style-type: none"> <li>• Large occupancy loads in larger structures.</li> <li>• Short-term rentals</li> <li>• Multi-floor structures</li> <li>• Some may not know the property identification number or street/road name when calling 9-1-1</li> <li>• Transient population is not significant in South Huron in the summer as most are travelling through the community to the Lake Huron area.</li> </ul>

*Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all the information on all worksheets together to make decisions about the provision of fire protection services in their municipality/community.*

## Worksheet 5: Hazard Profile

List potential hazards in the community including but not limited to hazardous materials 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, natural gas, and oil facilities).

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

### Hazard Profile Risks

List the hazards in your community and the fire or other emergency risk of each. Assign probability, consequence and risk levels to each risk identified.

Hazard Profile Risks			
Identified Hazard	Probability	Consequence	Assigned Risk Level
Ice storm  (power interruptions/ disruptions in communications/ delayed access)	Unlikely	Catastrophic	Moderate
Flood  (obstructed access/increased calls for rescue/assistance)	Unlikely	Major	Moderate
Extreme Temperatures	Unlikely	Insignificant	Low
Wildland Urban-Interface Fires	Almost Certain	Minor	Moderate
Utility Disruption	Likely	Minor	Moderate
Communications Disruption	Possible	Major	Moderate
Snowstorm/Blizzard/Hail	Almost Certain	Minor	Moderate



<b>Hazard Profile Risks</b>			
<b>Identified Hazard</b>	<b>Probability</b>	<b>Consequence</b>	<b>Assigned Risk Level</b>
<b>Severe Wind Event – Tornado</b>	Possible	Catastrophic	High
<b>Extreme Downburst</b>	Rare	Catastrophic	Moderate
<b>Drought – Low Water</b>	Rare	Minor	Low
<b>Potable Water Emergency – Wells</b>	Possible	Moderate	Moderate
<b>Potable Water – Municipal Water System- Failure/Haz-Mat/Sabotage/Terrorism</b>	Rare	Major	Moderate
<b>Waste-Water Treatment Plant – Failure/Haz-Mat/Sabotage/Terrorism</b>	Rare	Major	Moderate
<b>Emergency Water Supply – Bottled Water Required</b>	Rare	Moderate	Low
<b>Critical Infrastructure Failure – Continuity of Government</b>	Possible	Moderate	Moderate
<b>Influenza Outbreak</b>	Likely	Major	High
<b>Road Incident – Mass Casualty</b>	Possible	Minor	Moderate
<b>Cyber Attack on Municipal Servers</b>	Possible	Major	Moderate
<b>Earthquake</b>	Rare	Minor	Low
<b>Severe Thunderstorm</b>	Likely	Moderate	Moderate
<b>Erosion</b>	Rare	Minor	Low
<b>Large Fire</b>	Likely	Major	High

<b>Hazard Profile Risks</b>			
<b>Identified Hazard</b>	<b>Probability</b>	<b>Consequence</b>	<b>Assigned Risk Level</b>
<b>High Angle Rescue</b>	Unlikely	Minor	Low
<b>Trench Rescue</b>	Unlikely	Major	Moderate
<b>Special Events (e.g., Fire Scene Crowd Control, Stage/Viewing Stands Collapse)</b>	Rare	Moderate	Low
<b>Mail Delivery</b>	Rare	Minor	Low
<b>Train Derailment – Hazardous materials</b>	Rare	Insignificant	Low
<b>Train Derailment – Passenger</b>	Rare	Insignificant	Low
<b>Civil Disorder – Riots, labour disputes, sports team win/losses, etc.</b>	Rare	Minor	Low
<b>Active Threat</b>	Rare	Major	Moderate
<b>Motor Vehicle Collisions</b>	Almost Certain	Moderate	High
<b>Aircraft Crash</b>	Possible	Major	Moderate
<b>Terrorism &amp; Sabotage – Hostage taking, chemical attack, critical infrastructure attack,</b>	Unlikely	Major	Moderate
<b>Natural Gas/Oil/Methane Emergencies – Transmission lines/storage/distribution. Methane – Landfill Site</b>	Unlikely	Moderate	Moderate

<b>Hazard Profile Risks</b>			
<b>Identified Hazard</b>	<b>Probability</b>	<b>Consequence</b>	<b>Assigned Risk Level</b>
<b>Hazardous Materials Incident – Fixed Location</b>	Likely	Moderate	Moderate
<b>Hazardous Materials Incident - Transportation</b>	Likely	Moderate	Moderate
<b>Hurricane</b>	Rare	Insignificant	Low
<b>Structural Collapse</b>	Possible	Major	Moderate
<b>War/International Emergency</b>	Unlikely	Insignificant	Low
<b>Fog – Poor Visibility</b>	Almost Certain	Minor	Moderate
<b>Radioactive Emergency</b>	Unlikely	Minor	Low
<b>Dam Failure</b>	Rare	Minor	Low
<b>Human Health – Epidemic</b>	Likely	Catastrophic	High
<b>Human Health – Pandemic</b>	Possible	Catastrophic	High
<b>Substance Abuse/Overdose</b>	Possible	Insignificant	Low
<b>Plant Disease and Pest Infestation</b>	Unlikely	Minor	Low
<b>Farm Animal Disease</b>	Unlikely	Minor	Low
<b>Geometric Storm/Solar Flares</b>	Rare	Major	Moderate
<b>Landslide</b>	Rare	Insignificant	Low
<b>Natural Space Object Crash</b>	Rare	Insignificant	Low
<b>Human Made Space Object Crash</b>	Rare	Insignificant	Low
<b>Transportation Emergency – Marine</b>	Rare	Insignificant	Low

<b>Hazard Profile Risks</b>			
<b>Identified Hazard</b>	<b>Probability</b>	<b>Consequence</b>	<b>Assigned Risk Level</b>
<b>Large Explosion and Resulting Fire (e.g., natural gas line rupture, fuel storage depot failure, training derailment)</b>	Possible	Major	Moderate
<b>Subsidence</b>	Unlikely	Minor	Low
<b>Loss of skills/Staff Turnover/ Group Lottery Win</b>	Unlikely	Minor	Low
<b>Business Bankruptcy (During COVID-19 Pandemic)</b>	Almost Certain	Major	High
<b>Business Bankruptcy (Post Pandemic)</b>	Almost Certain	Moderate	High
<b>Worksite Strike/Labour Disruption</b>	Likely	Minor	Moderate
<b>Vandalism/Security Breach/ Criminal Activity</b>	Possible	Moderate	Moderate
<b>Workplace Violence</b>	Likely	Moderate	Moderate
<b>Health &amp; Safety Incidents</b>	Likely	Minor	Moderate
<b>Forest Fire - Evacuees</b>	Rare	Insignificant	Low

*Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all the information on all worksheets together to make decisions about the provision of fire protection services in their municipality/community.*

### Worksheet 6: Public Safety Response Profile

Consider other public safety response agencies (e.g., police, EMS, rescue) that might be tasked with or able to assist in the response to emergencies or in mitigating the impact of emergencies. Also consider the types of incidents each can respond to and any issues or concerns that may impact fire department response.

#### Public Safety Response Profile Risks

List the other public safety response agencies in your community and the incidents they respond to.

Public Safety Response Profile Risks			
Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role at the Incident	Issues/Concerns
Ontario Provincial Police	<ul style="list-style-type: none"> <li>• MVCs on network of roads/streets.</li> <li>• Fire scenes</li> <li>• Acts of crime</li> <li>• Acts of violence</li> <li>• Acts of terrorism</li> <li>• Any time the Emergency Response Plan is initiated</li> <li>• Security of dignitaries</li> <li>• Medium Urban Search &amp; Rescue (MUSAR)</li> <li>- Major structural collapse</li> </ul>	<ul style="list-style-type: none"> <li>• Scene control, traffic control, investigations</li> <li>• Establish perimeters.</li> <li>• Provide marine support.</li> <li>• Protective services</li> <li>• Canine services</li> <li>• Provide air support – helicopter and fixed wing.</li> <li>• Search &amp; rescue</li> <li>• CBRNE support team</li> </ul>	None known

<b>Public Safety Response Profile Risks</b>			
<b>Identified Public Safety Response Agency</b>	<b>Types of Incidents They Respond To</b>	<b>What is their Role at the Incident</b>	<b>Issues/Concerns</b>
	<ul style="list-style-type: none"> <li>- Entrapments</li> <li>- Earthquakes</li> <li>- Tornadoes</li> <li>- Severe weather events</li> </ul> Explosions		
<b>Royal Canadian Mounted Police</b>	<ul style="list-style-type: none"> <li>• Acts of terrorism or sabotage</li> <li>• Criminal activity of international significance</li> <li>• Illegal importing of goods such as drugs</li> <li>• Smuggling of illegal immigrants</li> <li>• Security of dignitaries</li> </ul>	<ul style="list-style-type: none"> <li>• Investigations that fall under their jurisdiction</li> <li>• Notification of Interpol and other international police agencies as required.</li> <li>• Canine services</li> </ul>	None known
<b>Huron County Paramedic Services (EMS)</b>	<ul style="list-style-type: none"> <li>• Medical calls</li> <li>• Fire stand-by</li> <li>• Acts of violence</li> <li>• Acts of terrorism</li> <li>• Mass casualty</li> <li>• Any time the Emergency Response Plan is initiated</li> </ul>	<ul style="list-style-type: none"> <li>• Take control and provide direction, upon arrival, in the treatment of the sick and injured.</li> <li>• Triage patients at mass casualty incident</li> <li>• Transport sick and injured to medical facilities.</li> </ul>	<ul style="list-style-type: none"> <li>• Formal response agreement in place.</li> </ul> The response agreement was initiated in 2016 and should be updated.

<b>Public Safety Response Profile Risks</b>			
<b>Identified Public Safety Response Agency</b>	<b>Types of Incidents They Respond To</b>	<b>What is their Role at the Incident</b>	<b>Issues/Concerns</b>
		<ul style="list-style-type: none"> <li>• Liaise with local hospitals on patient condition</li> </ul>	
<b>Outside Fire Services</b>	<ul style="list-style-type: none"> <li>• Automatic or Mutual Aid Incidents</li> <li>• Respond to structure fires with tanker support if lack of hydrants</li> </ul>	<ul style="list-style-type: none"> <li>• Fire Suppression</li> <li>• Provide staffing and equipment as requested.</li> <li>• Perform all duties that may be requested of them by the SHFD Incident Commander (IC).</li> <li>• May provide emergency coverage until SHFD is able to back fill stations while crews recalled.</li> <li>• SHFD has automatic aid and mutual aid agreements in place.</li> </ul>	<ul style="list-style-type: none"> <li>• Automatic Aid agreements, even through originally signed several years ago and remain in effect, they should be reviewed and updated as a number are outdated.</li> <li>• Any agreement should meet the needs and circumstances of the residents living in the response area, of that agreement.</li> </ul>
<b>Canada Border Services Agency (CBSA)</b>	<ul style="list-style-type: none"> <li>• Illegal immigrants</li> <li>• Smuggling of goods into the country</li> <li>• Border security</li> <li>• Marine operations at major ports</li> </ul>	<ul style="list-style-type: none"> <li>• Scene control, traffic control, investigations</li> <li>• Establish perimeters.</li> <li>• Detain individuals that enter the country illegally.</li> </ul>	<ul style="list-style-type: none"> <li>• None known</li> </ul>

<b>Public Safety Response Profile Risks</b>			
<b>Identified Public Safety Response Agency</b>	<b>Types of Incidents They Respond To</b>	<b>What is their Role at the Incident</b>	<b>Issues/Concerns</b>
	<ul style="list-style-type: none"> <li>• Threats to the welfare and security of Canada</li> </ul>	<ul style="list-style-type: none"> <li>• Seizure of illegal goods coming into the country.</li> <li>• Protect food supply entering the country.</li> <li>• Provide detector dogs.</li> <li>• Work collaboratively with Canadian and International agencies.</li> </ul>	
<b>St. John Ambulance – Grey, Bruce, Huron Branch</b>	<ul style="list-style-type: none"> <li>• Assist with medical services at large public gatherings</li> </ul>	<ul style="list-style-type: none"> <li>• Support local paramedic services with patient treatment.</li> <li>• Do not transport patients to medial facilities.</li> <li>• Provide a first aid post/rest area.</li> </ul>	<ul style="list-style-type: none"> <li>• None known</li> </ul>
<b>Canadian Red Cross – London Office</b>	<ul style="list-style-type: none"> <li>• Public events in which large number of people in attendance</li> <li>• Major incidents where people are displaced from their homes</li> </ul>	<ul style="list-style-type: none"> <li>• Supporting SHFD at public events and extreme disasters</li> <li>• Sheltering and connecting family members</li> <li>• Provide emergency and disaster services (e.g.,</li> </ul>	<ul style="list-style-type: none"> <li>• None known</li> </ul>



<b>Public Safety Response Profile Risks</b>			
<b>Identified Public Safety Response Agency</b>	<b>Types of Incidents They Respond To</b>	<b>What is their Role at the Incident</b>	<b>Issues/Concerns</b>
		temporary shelter, food, clothing)	
<b>Ontario Fire Marshal &amp; Emergency Management (OFMEM)</b>	<ul style="list-style-type: none"> <li>• Suspicious fires</li> <li>• Any fire in which there is either a civilian or firefighter fatality.</li> <li>• High dollar loss fires</li> <li>• Fires at vulnerable occupancies</li> <li>• Fires in which may be in the public's best interest.</li> <li>• Incidents that require a provincial specialty team such as HAZMAT (hazardous materials), CBRNE (chemical, biological, radiological, nuclear, explosives), HUSAR (heavy urban search and rescue)</li> <li>• Emergency Preparedness &amp; Response Unit</li> </ul>	<ul style="list-style-type: none"> <li>• Investigation – Lead agency working in conjunction with the police.</li> <li>• Provide technical support</li> </ul>	<ul style="list-style-type: none"> <li>• None known</li> </ul>

<b>Public Safety Response Profile Risks</b>			
<b>Identified Public Safety Response Agency</b>	<b>Types of Incidents They Respond To</b>	<b>What is their Role at the Incident</b>	<b>Issues/Concerns</b>
<b>Emergency Management Ontario – Heavy Urban Search &amp; Rescue (HUSAR)</b>	<ul style="list-style-type: none"> <li>• Major structural collapse</li> <li>• Entrapments</li> <li>• Earthquakes</li> <li>• Tornadoes</li> <li>• Severe weather events</li> <li>• Explosions</li> </ul>	<ul style="list-style-type: none"> <li>• Search &amp; rescue</li> </ul>	<ul style="list-style-type: none"> <li>• None known</li> </ul>
<b>Transport Canada</b>	<ul style="list-style-type: none"> <li>• Respond to transportation accidents involving some road vehicles, along with all rail, marine and aviation incidents</li> </ul>	<ul style="list-style-type: none"> <li>• Take the lead investigation role in many transportation accidents with support of other agencies.</li> <li>• Many transportation regulations are the department’s responsibilities to develop and monitor.</li> <li>• The findings of these investigations may lead to changes in some of the transportation regulations.</li> <li>• Canadian Transport Emergency Centre aids the emergency response and</li> </ul>	<ul style="list-style-type: none"> <li>• None known</li> </ul>

<b>Public Safety Response Profile Risks</b>			
<b>Identified Public Safety Response Agency</b>	<b>Types of Incidents They Respond To</b>	<b>What is their Role at the Incident</b>	<b>Issues/Concerns</b>
		mitigation of dangerous goods emergencies.	
<b>Trenton Search and Rescue – Joint Rescue Co-Ordination Centre Trenton</b>	<ul style="list-style-type: none"> <li>• Air and marine incidents</li> <li>• Cover 11 million km<sup>2</sup></li> <li>• 30% of coverage area is water.</li> <li>• Rescues in remote areas</li> </ul>	<ul style="list-style-type: none"> <li>• Perform search &amp; 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.</li> <li>• Remove and treat injured persons.</li> <li>• Direct other resources to the incident location.</li> </ul>	<ul style="list-style-type: none"> <li>• None known</li> </ul>
<b>Canadian Coast Guard – Goderich Base</b>	<ul style="list-style-type: none"> <li>• Marine search and rescue</li> <li>• Navigational or transportation emergencies in Canadian waters</li> <li>• Ice breaking to free vessels</li> </ul>	<ul style="list-style-type: none"> <li>• Respond to support local emergency services in the stabilization of the scene</li> <li>• Work collaboratively with other government agencies both Canadian and American</li> </ul>	<ul style="list-style-type: none"> <li>• None known</li> </ul>

Public Safety Response Profile Risks			
Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role at the Incident	Issues/Concerns
	<ul style="list-style-type: none"> <li>• Marine HAZMAT / pollution emergencies</li> </ul>	<ul style="list-style-type: none"> <li>• Issue warnings of navigational emergencies</li> <li>• Marine security</li> </ul>	
<b>South Huron Fire Department</b>	<ul style="list-style-type: none"> <li>• Fires</li> <li>• MVCs</li> <li>• Technical rescues                             <ul style="list-style-type: none"> <li>○ Water – Shore based</li> <li>○ Ice – Shore based</li> <li>○ High angle rope – Not provided</li> <li>○ Low angle rope – Not provided</li> <li>○ Confined space – Not provided</li> <li>○ Trench Rescue – Not provided</li> </ul> </li> <li>• Tiered medical – VSA and unconscious patients only</li> <li>• Hazardous materials incidents – Awareness level</li> <li>• Public Education</li> <li>• Flooding</li> </ul>	<ul style="list-style-type: none"> <li>• Suppress and extinguish fires.</li> <li>• Fire cause determination</li> <li>• Perform rescues.</li> <li>• Property conservation</li> <li>• Vehicle extrication, including farm equipment.</li> <li>• Assist other, emergency response agencies.</li> <li>• Assist with evacuations.</li> </ul>	<ul style="list-style-type: none"> <li>• SHFD had received its superior tanker shuttle accreditation in the past, which has expired and should be renewed.</li> <li>• Firefighters should be trained to awareness level for all technical rescues in accordance with Ministry of Labour, Section 21 Guidance Notes.</li> <li>• Do not conduct elevator rescues, SHFD should receive training on mitigating this type of rescue.</li> <li>• SHFD is a member of the Huron County Mutual Fire Aid Plan. The By-Law permitting their participation</li> </ul>

<b>Public Safety Response Profile Risks</b>			
<b>Identified Public Safety Response Agency</b>	<b>Types of Incidents They Respond To</b>	<b>What is their Role at the Incident</b>	<b>Issues/Concerns</b>
			is outdated and should be reviewed and updated for Council's approval.
<b>Technical Standards &amp; Safety Authority (TSSA)</b>	<ul style="list-style-type: none"> <li>Fires and explosions that involve fuel fired appliances such as gas kitchen appliances, furnaces, hot water heaters, barbeques, gas fireplaces, etc.</li> <li>Gas leaks that involve pressurized vessels and pipelines</li> <li>Carbon monoxide leaks</li> <li>Boilers and pressurized vessel failures</li> <li>Elevator, ski lift and amusement park ride failures</li> </ul>	<ul style="list-style-type: none"> <li>Investigations relating to cause and origin.</li> <li>Investigations that involve the failure of a pressurized vessel (e.g., boilers, LPG tanks)</li> <li>Assist other agencies during investigations.</li> <li>Assist with enforcement.</li> <li>Technical support</li> </ul>	<ul style="list-style-type: none"> <li>None known</li> </ul>
<b>Electrical Safety Authority</b>	<ul style="list-style-type: none"> <li>Fires that involve electrical equipment</li> </ul>	<ul style="list-style-type: none"> <li>Assist with fire investigations.</li> <li>Electrical code enforcement</li> </ul>	<ul style="list-style-type: none"> <li>None known</li> </ul>
<b>Ausable Bayfield Conservation Authority</b>	<ul style="list-style-type: none"> <li>Flooding</li> <li>Wetland protection</li> </ul>	<ul style="list-style-type: none"> <li>Support agency</li> </ul>	<ul style="list-style-type: none"> <li>None known</li> </ul>

<b>Public Safety Response Profile Risks</b>			
<b>Identified Public Safety Response Agency</b>	<b>Types of Incidents They Respond To</b>	<b>What is their Role at the Incident</b>	<b>Issues/Concerns</b>
	<ul style="list-style-type: none"> <li>• Wildland/forest fires</li> </ul>	<ul style="list-style-type: none"> <li>• Assist the CEMC for Huron County</li> <li>• Work closely with MNRF regarding water level predictions.</li> <li>• Predict future water levels.</li> <li>• Predict rate of rise and descend.</li> <li>• Map out areas of concern requiring possible evacuation</li> </ul>	
<b>Union Gas</b>	<ul style="list-style-type: none"> <li>• Respond to gas leaks involving their transmission equipment.</li> <li>• Carbon monoxide detection</li> <li>• Severe weather events</li> </ul>	<ul style="list-style-type: none"> <li>• Mitigation of a gas leak</li> <li>• Investigation of incidents that involve the Union Gas infrastructure.</li> <li>• Investigate the source of CO.</li> <li>• Assist other agencies as required, during fire investigations</li> </ul>	<ul style="list-style-type: none"> <li>• None known</li> </ul>
<b>Hydro One and Festival Hydro Utilities</b>	<ul style="list-style-type: none"> <li>• Downed power lines</li> <li>• Severe weather events</li> <li>• Structure fires</li> </ul>	<ul style="list-style-type: none"> <li>• Terminate power supply on transmission systems as required.</li> </ul>	<ul style="list-style-type: none"> <li>• None known</li> </ul>

Public Safety Response Profile Risks			
Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role at the Incident	Issues/Concerns
	<ul style="list-style-type: none"> <li>Industrial accidents for disconnecting the power</li> </ul>	<ul style="list-style-type: none"> <li>Reinstate power supply as required</li> </ul>	

*Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all the information on all worksheets together to make decisions about the provision of fire protection services in their municipality/community.*

### Worksheet 7: Community Services Profile

Consider community service agencies, organizations or associations that provide services that support the fire department in the delivery of public fire safety education, Fire Code inspection and enforcement, and emergency response. This 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

List the community service agencies and the types of services they can provide.

Community Service Profile Risks		
Community Service Agencies	Types of Assistance They Can Provide	Issues/Concerns
Canadian Red Cross	<ul style="list-style-type: none"> <li>• Emergency Housing</li> <li>• Food</li> <li>• Emergency purchases (e.g., clothing, toiletries, food, etc.)</li> </ul>	None known
Municipality of South Huron – Community Emergency Management Coordinator (CEMC)	<ul style="list-style-type: none"> <li>• Assist with those residents during emergency evacuations.</li> <li>• Arrange for buses for temporary shelter.</li> <li>• Assist with co-ordinating mass vaccination clinics.</li> </ul>	None known
Salvation Army - Goderich	<ul style="list-style-type: none"> <li>• Emergency shelter and temporary housing</li> <li>• Food and clothing vouchers</li> </ul>	None known



<b>Community Service Profile Risks</b>		
<b>Community Service Agencies</b>	<b>Types of Assistance They Can Provide</b>	<b>Issues/Concerns</b>
	<ul style="list-style-type: none"> <li>• Onsite food during an emergency</li> <li>• Spiritual support to those displaced</li> </ul>	
<b>Exeter Food Bank</b>	<ul style="list-style-type: none"> <li>• Emergency supply of food</li> </ul>	None known
<b>Huron County Social &amp; Property Services</b>	<ul style="list-style-type: none"> <li>• Housing</li> <li>• Financial support</li> </ul>	None known
<b>Exeter Lions Club</b>	<ul style="list-style-type: none"> <li>• Service in kind</li> <li>• Provide grocery bags with fire safety messaging printed on them.</li> </ul>	None known
<b>South Huron Optimist Club</b>	<ul style="list-style-type: none"> <li>• Services in kind</li> </ul>	None known
<b>Huron Perth Public Health</b>	<ul style="list-style-type: none"> <li>• General well being support.</li> <li>• Continuous improvement in the quality of services and programs with all efforts oriented to meet the specific needs of the people and communities being served.</li> <li>• Design services and programs to reduce health disparities and inequities.</li> </ul>	None known
<b>Victim’s Services Huron County</b>	<ul style="list-style-type: none"> <li>• Provides victims of crime and/or traumatic circumstances with immediate support and referrals to available programs and services.</li> </ul>	None known

<b>Community Service Profile Risks</b>		
<b>Community Service Agencies</b>	<b>Types of Assistance They Can Provide</b>	<b>Issues/Concerns</b>
<b>WOTCH Community Club Huron - Exeter</b>	<ul style="list-style-type: none"> <li>• Mental health and support programs</li> </ul>	None known
<b>Canadian Mental Health Association</b>	<ul style="list-style-type: none"> <li>• Ongoing mental health support</li> </ul>	None known
<b>Community Support Services Huron Perth</b>	<ul style="list-style-type: none"> <li>• Suicide prevention services</li> </ul>	None known
<b>Huron County Housing &amp; Property Services</b>	<ul style="list-style-type: none"> <li>• Emergency and long-term housing</li> <li>• Access to vulnerable populations</li> </ul>	None known
<b>Huron Shores Area Transit</b>	<ul style="list-style-type: none"> <li>• Provide buses for staff and residents at large incidents</li> </ul>	None known
<b>Huron Perth Student Transportation services</b>	<ul style="list-style-type: none"> <li>• Provide buses for staff and residents at large incidents</li> </ul>	None known
<b>CHATS Seniors</b>	<ul style="list-style-type: none"> <li>• Access to vulnerable populations</li> </ul>	None known
<b>South Huron Welcome Centre - Exeter</b>	<ul style="list-style-type: none"> <li>• Access to higher-risk populations (e.g., new residents to Canada)</li> </ul>	None known

<b>Community Service Profile Risks</b>		
<b>Community Service Agencies</b>	<b>Types of Assistance They Can Provide</b>	<b>Issues/Concerns</b>
<b>Age Friendly Community Plan – Mun. of South Huron</b>	<ul style="list-style-type: none"> <li>• Access to vulnerable populations (e.g., seniors and their caregivers)</li> </ul>	None known
<b>Avon Maitland District School Board</b>	<ul style="list-style-type: none"> <li>• Access to student population</li> </ul>	None known
<b>Huron Perth Catholic District School Board</b>	<ul style="list-style-type: none"> <li>• Access to student population</li> </ul>	None known
<b>Royal Canadian Legion – Exeter Branch</b>	<ul style="list-style-type: none"> <li>• Services in kind</li> <li>• Donations (e.g., free food coupons with fire safety messaging on them)</li> </ul>	None known

*Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all the information on all worksheets together to make decisions about the provision of fire protection services in their municipality/community.*

## Worksheet 8: Economic Profile

Consider the industrial or commercial sectors that provide significant economic production and jobs to the local economy and the impact to the community’s economy if a fire or other emergency occurred in occupancies housing those sectors.

### Economic Profile Risks

List 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. Assign probability, consequence, and risk levels for each risk identified.

**NOTE: The following features are not identified in the order of their level of risk.**

Economic Profile Risks				
Identified Occupancy	Key Risks	Probability	Consequence	Assigned Risk Level
<b>Vulnerable Occupancies</b>	Fire	Possible	Minor	Moderate
	Weather Event	Possible	Moderate	Moderate
	Power Failure	Possible	Minor	Moderate
	Pandemic	Possible	Catastrophic	High
<b>Grocery Stores</b>	Fire	Possible	Major	Moderate
	Weather Event	Possible	Minor	Moderate
	Domestic Terrorism	Rare	Catastrophic	Moderate
	Pandemic	Possible	Moderate	Moderate
	Power Outage	Likely	Major	High
	Telecommunications Disruption	Possible	Moderate	Moderate
	Natural Gas Disruption	Unlikely	Minor	Low
<b>Trucking Firms</b>	Fire	Possible	Minor	Moderate
	Weather Event	Possible	Moderate	Moderate
	Pandemic	Possible	Moderate	Moderate
<b>Restaurants/ Fast Food Outlets</b>	Weather Event	Possible	Minor	Moderate
	Telecommunications Disruption	Possible	Moderate	Moderate

<b>Economic Profile Risks</b>				
<b>Identified Occupancy</b>	<b>Key Risks</b>	<b>Probability</b>	<b>Consequence</b>	<b>Assigned Risk Level</b>
	Domestic Terrorism	Rare	Catastrophic	Moderate
	Pandemic	Possible	Catastrophic	High
	Power Outage	Likely	Moderate	Moderate
	Fire	Possible	Major	Moderate
<b>Small Business</b>	Fire	Possible	Major	Moderate
	Pandemic	Possible	Catastrophic	High
	Domestic Terrorism	Rare	Catastrophic	Moderate
	Weather Event	Possible	Minor	Moderate
	Power Outage	Likely	Moderate	Moderate
	Telecommunications Disruption	Unlikely	Minor	Low
<b>Municipal Operations</b>	Weather Event	Possible	Major	Moderate
	Flooding	Likely	Major	High
	Pandemic	Possible	Major	Moderate
	Power Outage	Likely	Major	High
	Cyber Attack	Possible	Catastrophic	High
	Fire	Possible	Major	Moderate
	Wildland Fires	Likely	Minor	Moderate
	Road Closure of Long Duration	Possible	Insignificant	Low
	Domestic Terrorism	Rare	Catastrophic	Moderate
	Water Treatment Facility Mechanical Failure	Unlikely	Major	Moderate
	Terrorism or Sabotage	Unlikely	Major	Moderate
	Waste-Water Treatment Facility Mechanical Failure	Unlikely	Major	Moderate
<b>Municipal Arenas</b>	Power Outage	Possible	Insignificant	Low
	Weather Event	Possible	Moderate	Moderate
	Pandemic	Possible	Minor	Moderate

<b>Economic Profile Risks</b>				
<b>Identified Occupancy</b>	<b>Key Risks</b>	<b>Probability</b>	<b>Consequence</b>	<b>Assigned Risk Level</b>
	Natural Gas Disruption	Unlikely	Minor	Low
<b>Schools</b>	Fire	Possible	Major	Moderate
	Domestic Terrorism	Rare	Catastrophic	Moderate
	Weather Event	Possible	Moderate	Moderate
	Natural Gas Disruption	Unlikely	Moderate	Moderate
	Power Outage	Likely	Moderate	Moderate
	Pandemic	Possible	Catastrophic	High
	Potable Water Emergency	Unlikely	Moderate	Moderate
	Influenza Outbreak	Possible	Moderate	Moderate
<b>Municipality</b>	Hazardous Materials Incident	Possible	Moderate	Moderate
	Pandemic	Possible	Catastrophic	High
<b>Campgrounds/ Seasonal Lodging</b>	Fire	Possible	Moderate	Moderate
	Weather Event	Possible	Moderate	Moderate
	Pandemic	Possible	Moderate	Moderate
<b>Financial Institutions</b>	Telecommunications Disruption	Possible	Moderate	Moderate
	Fire	Possible	Moderate	Moderate
	Domestic Terrorism	Rare	Catastrophic	Moderate
	Pandemic	Possible	Catastrophic	High
	Cyber Attack	Rare	Insignificant	Low
<b>Industrial/ Manufacturing</b>	Fire	Possible	Major	Moderate
	Power Disruption	Possible	Minor	Moderate
	Domestic Terrorism	Rare	Catastrophic	Moderate
	Pandemic	Possible	Major	High

*Note: The information on this worksheet should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments*

*to consider all the information on all worksheets together to make decisions about the provision of fire protection services in their municipality/community.*

**Worksheet 9a: Past Loss and Event History Profile**

Consider previous response data to identify trends regarding the deaths, injuries, dollar loss, and causes of fire in various occupancy types. This assists in determining the leading causes of fires and high-risk locations and occupancies. In the absence of fire loss data, local knowledge may be the most reliable predictor of fire risk in your community. Provincial statistics can assist in determining the types of occupancies and locations where fire losses, injuries, and deaths most commonly occur.

**TABLE #17: Fire by Property Category**

**NOTE:** All 2020 data is subject to change.

		2016	2017	2018	2019	2020
<b>Total</b>	Loss Fires	12	15	18	16	7
	Injuries	1	0	0	0	0
	Fatalities	0	0	0	0	0
	Est \$ Loss	478,600	1,264,200	4,105,700	3,359,121	4,208,022
	No Loss Fires	10	1	11	17	6
<b>Structure</b>	Loss Fires	8	8	13	8	2
	Injuries	1	0	0	8	0
	Fatalities	0	0	0	8	0
	Est \$ Loss	372,100	1,213,000	4,084,000	3,180,012	4,062,001
	No Loss Fires	2	0	2	3	4
<b>Outdoor</b>	Loss Fires	2	1	4	2	0
	Injuries	0	0	0	0	0
	Fatalities	0	0	0	0	0
	Est \$ Loss	76,500	1,000	16,700	8	0
	No Loss Fires	0	0	0	5	0
<b>Vehicle</b>	Loss Fires	2	6	1	6	3
	Injuries	0	0	0	0	0
	Fatalities	0	0	0	0	0
	Est \$ Loss	28,000	50,200	5,000	179,101	146,001
	No Loss Fires	0	0	0	1	2
<b>No Loss – Outdoor Fires excluded</b>	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	8	1	9	8	14



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		YEAR: 2018					YEAR: : 2019					YEAR: 2020				
		# of Fires	\$ Loss	# of Injuries	# of Deaths	Causes	# of Fires	\$ Loss	# of Injuries	# of Deaths	Causes	# of Fires	\$ Loss	# of Injuries	# of Deaths	Causes
<b>Group A</b>	Assembly	1	30,000	0	0	See Below	0	0	0	0	N/A	0	0	0	0	N/A
<b>Group B</b>	Detention/ Care & Treatment/ Care	0	0	0	0	N/A	1	4	0	0	See Below	0	0	0	0	N/A
<b>Group C</b>	Residential	6	462,000	0	0	See Below	1	1,005,000	0	0	See Below	2	4,045,001	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
<b>Group D</b>	Business & Personal Service	0	0	0	0	N/A	0	0	0	0	N/A	0	0	0	0	N/A
<b>Group E</b>	Mercantile	0	0	0	0	N/A	0	0	0	0	N/A	0	0	0	0	N/A
<b>Group F</b>	Industrial	3	2,070,000	0	0	See Below	2	375,000	0	0	See Below	0	0	0	0	N/A
<b>Other –Structures/ Properties not classified by OBC</b>		1	2,000	0	0	See Below	0	0	0	0	N/A	2	17,000	0	0	See Below
<b>Properties classified under National Farm Building Code</b>		2	1,520,000	0	0	See Below	4	1,800,008	0	0	See Below	0	0	0	0	N/A
<b>TOTALS</b>		13	4,084,000	0	0	See Below	8	3,180,012	0	0	See Below	4	4,062,001	0	0	See Below

**TABLE #18: Fires by Property Classification**

**Fire causes include:**

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

**Ignition sources include:**

- Appliances
- Cooking equipment
- Electrical distribution equipment
- Heating equipment, chimney, etc.
- Lighting equipment
- Open flame tools, smoker's articles
- Processing Equipment
- Miscellaneous
- Undetermined

**TABLE #19: Summary of Total Emergency Calls (fires and non-fire calls)**

**Municipality of South Huron**

	Total	Loss Fire Structure	Loss Fire Other	Loss Fire Vehicle	No Loss Fire	No Loss Fire – Excluded	Non-Fire Call
<b>2015</b>	165	6	0	4	0	0	155
<b>2016</b>	181	8	2	2	2	8	159
<b>2017</b>	165	8	1	6	0	1	149
<b>2018</b>	160	13	4	1	2	9	131
<b>2019</b>	181	8	2	6	9	8	148
<b>2020</b>	185	7	0	3	6	14	158

**Province of Ontario**

	Total	Loss Fire Structure	Loss Fire Other	Loss Fire Vehicle	No Loss Fire	No Loss Fire – Excluded	Non-Fire Call
<b>2015</b>	477,172	7,241	769	2,942	2,284	7,396	456,540
<b>2016</b>	494,858	7,171	832	2,843	2,410	8,649	472,953
<b>2017</b>	514,177	6,683	689	2,935	1,876	5,820	496,174
<b>2018</b>	546,083	7,000	806	3,240	2,092	7,406	525,539
<b>2019</b>	534,313	6,698	694	3,253	1,880	5,750	516,038

NOTE: The response data for the Province of Ontario for 2020 will not be available until 2022.

**TABLE #20: Overview Property Class, Injuries, Cause, Ignition Source**

			2016	2017	2018	2019	2020	
<b>Structure</b>	Total	Loss Fires	8	8	8	13	4	
		Injuries	1	0	0	0	0	
		Fatalities	0	0	0	0	0	
		Est \$ Loss	372,100	1,213,000	3,180,012	4,084,000	4,062,001	
		No Loss Fires	2	0	3	2	4	
	Intentional	Total	Loss Fires	4	0	0	1	0
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est \$ Loss	46,100	0	0	2,000	0
			No Loss Fires	0	0	0	0	0
		Arson	Loss Fires	4	0	0	1	0
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est \$ Loss	46,100	0	0	2,000	0
			No Loss Fires	0	0	0	0	0
	Unintentional	Total	Loss Fires	4	2	6	10	2
			Injuries	1	0	0	0	0
			Fatalities	0	0	0	0	0
			Est \$ Loss	326,000	100,004	862,000	2,782,000	4,045,001
No Loss Fires			1	0	0	2	4	
Design / Construction /		Loss Fires	1	1	2	4	1	
		Injuries	0	0	0	0	0	
		Fatalities	0	0	0	0		

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				2016	2017	2018	2019	2020
	Maintenance Deficiency	Est \$ Loss	10,000	4	2,000	1,045,000	4,000,000	
		No Loss Fires	0	0	0	0	0	
	Mechanical / Electrical Failure	Loss Fires	0	1	2	1	0	
		Injuries	0	0	0	0	0	
		Fatalities	0	0	0	0	0	
		Est \$ Loss	0	100,000	700,000	100,000	0	
		No Loss Fires	0	0	0	1	0	
	Misuse of Ignition Source / Material First Ignited	Loss Fires	2	0	2	4	1	
		Injuries	1	0	0	0	0	
		Fatalities	0	0	0	0	0	
		Est \$ Loss	16,000	0	160,000	137,000	45,001	
		No Loss Fires	1	0	0	1	0	
	Other Unintentional	Loss Fires	1	0	0	0	0	
		Injuries	0	0	0	0	0	
		Fatalities	0	0	0	0	0	
		Est \$ Loss	300,000	0	0	0	0	
		No Loss Fires	0	0	0	0	0	
	Undetermined	Loss Fires	0	0	0	1	0	
		Injuries	0	0	0	0	0	
		Fatalities	0	0	0	0	0	
Est \$ Loss		0	0	0	1,500,000	0		
No Loss Fires		0	0	0	0	0		
Other	Total	Loss Fires	0	0	1	0	0	
		Injuries	0	0	0	0	0	



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				2016	2017	2018	2019	2020
			Fatalities	0	0	0	0	0
			Est \$ Loss	0	0	350,000	0	0
			No Loss Fires	1	1	0	0	0
	Other		Loss Fires	0	0	1	0	0
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est \$ Loss	0	0	350,000	0	0
			No Loss Fires	1	1	0	0	0
	Undetermined	Total	Loss Fires	0	6	1	2	0
			Injuries	0	0	0	0	0
			Fatalities	0	0	0	0	0
			Est \$ Loss	0	3,080,008	1,000	1,300,000	0
			No Loss Fires	0	2	0	0	0
	Undetermined	Undetermined	Loss Fires	0	6	1	2	0
			Injuries	0	0	0	0	0
Fatalities			0	0	0	0	0	
Est \$ Loss			0	3,080,008	1,000	1,300,000	0	
No Loss Fires			0	2	0	0	0	

**TABLE #21: Structure Fire Causes - South Huron vs. the Province in 2019**

Fire Causes	South Huron		Ontario	
	Number of Fires	% of Total Fires	Number of Fires	% of Total Fires
Arson	0	0%	379	6%
Intentional Other	0	0	3	0%
Vandalism	0	0%	103	2%
Children Playing	0	0%	32	0%
Design / Construction / Maintenance Deficiency	1	13%	488	7%
Mechanical / Electrical Failure	1	13%	1,061	16%
Misuse of Ignition Source / Material First Ignited	0	0%	1,955	29%
Other Unintentional	0	0%	476	7%
Undetermined	6	75%	562	8%

**Note: The percentage figures indicated in Table 14 come from OFMEM and do not include no-loss or vehicle fires. The 2020 statistics for the Province of Ontario will not become available until 2022.**

**TABLE #22: Fires by Ignition Source Class**

			2016	2017	2018	2019	2020
<b>Structure</b>	Total	Loss Fires	8	8	8	13	4
		Injuries	1	0	0	0	0
		Fatalities	0	0	0	0	0
		Est \$ Loss	372,100	1,213,000	3,180,012	4,084,000	4,062,001
		No Loss Fires	2	0	3	2	4
	Appliances	Loss Fires	0	0	1	0	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est \$ Loss	0	0	4	0	0
		No Loss Fires	0	0	0	0	0
	Cooking Equipment	Loss Fires	1	2	0	1	0
		Injuries	1	0	0	0	0
		Fatalities	0	0	0	0	0
		Est \$ Loss	15,000	101,000	0	5,000	0
		No Loss Fires	0	0	1	0	0
	Electrical Distribution Equipment	Loss Fires	0	1	0	2	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est \$ Loss	0	1,000	0	25,000	0
		No Loss Fires	0	0	0	0	0
Heating Equipment, Chimney etc.	Loss Fires	1	0	1	2	2	
	Injuries	0	0	0	0	0	
	Fatalities	0	0	275,000	0	0	
	Est \$ Loss	10,000	0	0	25,000	4,045,001	



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			2016	2017	2018	2019	2020
	Lighting Equipment	No Loss Fires	0	0		0	4
		Loss Fires	0	0	0	1	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est \$ Loss	0	0	0	100,000	0
		No Loss Fires	0	0	0	0	0
	Open Flame tools, smoker's articles	Loss Fires	1	0	0	2	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est \$ Loss	1,000	0	0	32,000	0
		No Loss Fires	0	0	0	1	0
	Processing Equipment	Loss Fires	0	1	0	1	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est \$ Loss	0	500,000	0	1,000,000	0
		No Loss Fires	0	0	0	0	0
	Miscellaneous	Loss Fires	2	2	0	1	0
		Injuries	0	0	0	0	0
		Fatalities	0	0	0	0	0
		Est \$ Loss	310,000	410,000	0	2,000	0
No Loss Fires		2	0	0	0	0	
Undetermined	Loss Fires	3	2	6	3	0	
	Injuries	0	0	0	0	0	
	Fatalities	0	0	0	0	0	
	Est \$ Loss	36,100	201,000	2,905,008	2,800,000	0	
	No Loss Fires	0	0	2	0	0	

**TABLE #23: Structure Fire Ignition Source - South Huron vs. the Province in 2019**

Ignition Source	South Huron		Ontario	
	Number of Fires	% of Total Fires	Number of Fires	% of Total Fires
Appliances	1	13%	326	5%
Cooking Equipment	0	0%	1,117	17%
Electrical Distribution Equipment	0	0%	611	9%
Heating Equipment, Chimney etc.	1	13%	548	8%
Lighting Equipment	0	0%	205	3%
Open Flame tools, smoker's articles	0	0%	915	14%
Processing Equipment	0	0%	364	5%
Miscellaneous	0	0%	626	9%
Undetermined	6	75%	1,594	24%

**NOTE – The 2020 statistics for the Province of Ontario will not become available until 2022.**

**TABLE #24: Total Number of Fire Calls by Type and Percentage for South Huron**

Call Type	2017		2018		2019		2020	
	# of Calls	% of the Total Calls	# of Calls	% of the Total Calls	# of Calls	% of the Total Calls	# of Calls	% of the Total Calls
Outdoor Burning – Controlled	9	5%	9	6%	7	4%	3	2%
CO False Alarms	18	11%	16	10%	11	63%	14	7%
False Fire Calls	32	19%	24	15%	37	20%	96	52%
Medical/Resuscitator Calls	23	14%	13	8%	17	9%	7	4%
Other Response	13	8%	19	12%	24	13%	19	10%
Overpressure Ruptures/Explosion – No Fire	1	1%	0	0%	0	0%	0	0%
Pre-Fire Conditions	8	5%	9	6%	7	4%	6	3%
Property Fire/Explosions	8	5%	13	8%	8	4%	4	2%
Loss Fire Other	1	1%	4	3%	2	1%	D/N/A	D/N/A
No Loss Fire	0	0%	2	1%	9	5%	6	3%
No Loss Fire – Excluded	1	1%	9	6%	8	4%	14	7%
Public Hazard	11	7%	12	8%	10	6%	19	10%
Rescue	34	21%	29	18%	35	19%	48	30%
Loss Fire – Vehicles	6	4%	1	1%	6	3%	3	2%
<b>Total</b>	<b>165</b>		<b>160</b>		<b>181</b>		<b>185</b>	

## Worksheet 9b: Past Loss and Event History Profile

### Past Loss and Event History Profile Risks

List the causes for each occupancy type identified on the previous worksheet.  
Assign probability, consequence and risk levels to each cause identified.

<b>Past Loss and Event History Profile</b>				
<b>Occupancy Type/Location</b>	<b>Causes</b>	<b>Probability</b>	<b>Consequences</b>	<b>Assigned Risk Level</b>
<b>Group A – Assembly</b>	Arson	Possible	Moderate	Moderate
	Design/construction/maintenance deficiency	Possible	Moderate	Moderate
	Mechanical/electrical Failure	Possible	Moderate	Moderate
	Misuse of ignition source/materials first ignited	Possible	Moderate	Moderate
	Other Unintentional	Unlikely	Minor	Low
	Other	Possible	Minor	Moderate
	Undetermined	Possible	Moderate	Moderate
<b>Group B – Detention /Care &amp; Treatment/ Care</b>	Arson	Unlikely	Moderate	Moderate
	Design/construction/maintenance deficiency	Unlikely	Moderate	Moderate
	Mechanical/electrical failure	Possible	Moderate	Moderate

<b>Past Loss and Event History Profile</b>				
<b>Occupancy Type/Location</b>	<b>Causes</b>	<b>Probability</b>	<b>Consequences</b>	<b>Assigned Risk Level</b>
	Misuse of ignition source/materials first ignited	Unlikely	Moderate	Moderate
	Other Unintentional	Rare	Minor	Low
	Other	Rare	Minor	Low
	Undetermined	Unlikely	Minor	Low
<b>Group C – Residential</b>	Arson	Likely	Moderate	Moderate
	Design/construction/maintenance deficiency	Unlikely	Moderate	Moderate
	Mechanical/electrical Failure	Possible	Moderate	Moderate
	Misuse of ignition source/materials first ignited	Almost Certain	Moderate	High
	Other Unintentional	Unlikely	Moderate	Moderate
	Other	Unlikely	Minor	Low
	Undetermined	Likely	Moderate	Moderate
	Undetermined	Likely	Minor	Moderate
<b>Group F – Industrial</b>	Arson	Possible	Major	Moderate
	Design/construction/maintenance deficiency	Unlikely	Major	Moderate

<b>Past Loss and Event History Profile</b>				
<b>Occupancy Type/Location</b>	<b>Causes</b>	<b>Probability</b>	<b>Consequences</b>	<b>Assigned Risk Level</b>
	Mechanical/electrical Failure	Possible	Major	Moderate
	Misuse of ignition source/materials first ignited	Possible	Major	Moderate
	Other Unintentional	Unlikely	Minor	Low
	Other	Unlikely	Minor	Low
	Undetermined	Possible	Minor	Moderate
<b>Structures/Properties not classified by the OBC.</b>	Arson	Possible	Major	Moderate
	Design/construction/maintenance deficiency	Unlikely	Major	Moderate
	Mechanical/electrical Failure	Possible	Major	Moderate
	Misuse of ignition source/materials first ignited	Possible	Major	Moderate
	Other Unintentional	Unlikely	Minor	Low
	Other	Unlikely	Minor	Low
	Undetermined	Possible	Minor	Moderate
	Arson	Possible	Major	Moderate

<b>Past Loss and Event History Profile</b>				
<b>Occupancy Type/Location</b>	<b>Causes</b>	<b>Probability</b>	<b>Consequences</b>	<b>Assigned Risk Level</b>
<b>Structures/Properties not classified by the OBC</b>	Design/construction/maintenance deficiency	Unlikely	Major	Moderate
	Mechanical/electrical Failure	Possible	Major	Moderate
	Misuse of ignition source/materials first ignited	Possible	Major	Moderate
	Other Unintentional	Unlikely	Minor	Low
	Other	Unlikely	Minor	Low
	Undetermined	Possible	Minor	Moderate

*NOTE: The information on Worksheet 9b should be considered in conjunction with the information on all other worksheets, and not in isolation. Worksheet 10 allows fire departments to consider all the information on all worksheets together to make decisions about the provision of fire protection services in their municipality/community.*

## **Worksheet 9c: Past History Profile Property Conservation**

### **Past Loss and Event History Profile Risks**

Historically, structure fire dollar loss is an area that fire services review as part of the incident response data. This is the cost estimate to repair or rebuild a structure damaged by a fire. The building's contents are also included in calculating the fire loss. This has been based on current estimates of construction materials, labour, and the contents (e.g., furniture, appliances, fixtures, etc.).

Fire services review this data at the beginning of each year when they disseminate the previous year's activities. 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. When reported, it is the dollar loss that projects a negative overtone when reporting it to the media or Council.

A statistic that has not been reviewed in the past is the property and lives saved from fire. This can be described as the property that does not need to be replaced, lives that may have been rescued from a fire, but may not have been recorded in the reports as suffering any injuries. A fire service may have a main street fire that caused \$4 million in damage, but they may have saved \$8 million from being damaged or destroyed. The property and lives saved are successes in fire operations and is missed in the current reporting methodology. Statistics such as these should be promoted and commemorated despite the dollar loss factor.

Year end reports provided to the municipality's Council should also include the dollar amounts and lives saved from fire. This data should be supported in a positive manner illustrating efficiency in fire department operations at structure fires; firefighters should be made aware of these statistics. Such data, when shared with the firefighters, could serve to recognize excellent performance levels in the evaluation process of their duties. It should be noted that not all structure fires will have a save component to it.

The following worksheet has been formulated 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.

To calculate the property saved data, the following formula may be of assistance.



**TABLE #25: Total of Property Saved**

<b>Pre-Fire Value</b>	<b>–</b>	<b>Fire Loss</b>	<b>=</b>	<b>Total Value Saved</b>
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<b>Occupancy Classification</b>	<b>Year and Value of Property Saved</b>				
	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>	<b>2025</b>
Group A – Assembly					
Group B – Detention/Care & Treatment/Care					
Group C – Residential					
Group D – Business & Personal Service					
Group E – Mercantile					
Group F – Industrial					
Structures/Properties not classified by the O.B.C.					
Classified under the National Farm Building Code					
<b>Total Value of Property Saved</b>					
<b>Number of Lives Saved</b>					

The following table is the compilation and in-depth analysis of the risks identified during the completion of the nine mandatory profiles as previously mentioned. The worksheet contains the risks that were identified, the recommended level of treatment and the recommended

means of handling the risks. Council with the assistance of the Fire Chief will use this information in the formulation of the Community Risk Mitigation Strategies.

### **Worksheet 10: Identifying Treatment Options for the Top Risks in the Community**

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

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 so that fires may be prevented, and people react appropriately when fires occur. Fire Code inspections and enforcement help to ensure that buildings are, in compliance, with the Ontario Fire Code.

#### **Mitigate the Risk**

Mitigating the risk means implementing programs and initiatives to reduce the probability and/or consequence of a fire or emergency. For example, a routine Fire Code inspection and enforcement program to ensure Fire Code compliance helps to reduce the probability and consequence of a fire.

A pre-planning program involving fire suppression crews allows the fire department to gain knowledge about specific buildings in the community and their contents, fuel load, fire protection systems, etc. This information can be provided to the fire inspection staff who can ensure the building is compliant with the Fire Code. It can also assist suppression crews to plan fire suppression operations should a fire occur in a building. These activities can reduce the probability and consequence of a fire.

#### **Accept the Risk**

Accepting the risk means that after identifying and prioritizing a risk, the fire department determines that no specific programs or initiatives will be implemented to address this risk. In

this treatment option, the fire department accepts that the potential risk might happen and will respond if it occurs.

For example, typically fire departments do not implement programs to prevent motor vehicle collisions. It is generally accepted, however, that collisions will happen and that the fire department will respond when they do. Similarly, environmental hazards (e.g., ice storms) and medical calls cannot be prevented by a fire department program or initiative, yet 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**

Transferring the risk means the fire department transfers the impact and/or management of the risk 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. A community may enter into a fire protection agreement with a neighbouring community with respect to any, or all, of the Three Lines of Defence.

### **Setting the Type and Level of Fire Protection Services**

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

After considering these issues, the preferred treatment option (i.e., avoid the risk, mitigate the risk, accept the risk, or transfer the risk) can be noted in the *Preferred Treatment Option* column of worksheet 10 in Appendix A.

Fire departments should also ensure that operational policies and SOGs address the levels of service and activities required to address each risk. This includes setting goals and objectives and determining resources, training, equipment, activities, and programs required across each of 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:

- Implementation of public fire safety education, Fire Code inspections and enforcement, and emergency response activities that are appropriate to address 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.) that may be required to implement preferred treatment options.
- Strategic partners with common interests, available resources, or skill sets that could assist in addressing risks using the applicable risk assessment profiles.
- Establishing & Regulating By-laws, operational policies, and standard operating guidelines that reflect the fire protection services to be provided to address the identified risks.
- Establishment of goals and objectives, strategies, timelines, and evaluation for the proposed fire protection services to be provided.
- Communication with municipal council and the public to outline the types and levels of fire protection services that will be provided.

**NOTE: The following features are not identified in the order of their level of risk.**

Mandatory Profiles	Top Risk or Issues/ Concerns	Preferred Treatment Option
Geographic Profile	<b>Rivers/ streams/ wetlands</b>  <i>Body of water impacts training, equipment for response</i>	<b>Avoid and Mitigate Risk</b> – Maintain and update ice/water rescue training protocols, SOGs, policies and activities on an ongoing basis.  Evaluate the need of updating equipment specific to ice/water rescues.
	<b>Body of water impacts response time</b>	<b>Accept Risk</b> – Implement appropriate response protocols, SOGs, and activities in the event access points may not be accessible at the time of an incident.
	<b>Body of water</b>  <i>Recreational / tourist activities</i>	<b>Avoid and Mitigate Risk</b> – Public education programs initiated that involve the Municipality of South Huron and the Parks and Recreation Department. 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 have when going on the ice such as ice picks, throw rope, whistle or a loud horn, cellphone in a waterproof kit. The use of social media networks will assist in educating the public on the dangers of being near/on water in both the summer and winter months.  Educate seasonal residents on the importance of knowing their exact address so as not to delay fire service response.
	<b>Body of water</b>  <i>Rivers and tributaries</i>	<b>Avoid and Mitigate Risk</b> – The Municipality of South Huron does not have a dedicated Flood Plan, and thereby co-ordinates activities in the event of flooding with the ABCA who has a Flood Plan in place.

Mandatory Profiles	Top Risk or Issues/ Concerns	Preferred Treatment Option
		<p>The Ausable Water Shed tends to flood in the spring, significantly effecting the Exeter area.</p> <p>Lake Huron could become a risk of flooding its shoreline when water levels are high. The high-water levels may affect watersheds inland.</p>
	<b>Grass/ wildland/ forests</b>	<p><b>Avoid and Mitigate Risk</b> – Promote no burning fire bans and the outdoor burning by-law. Control vegetation growth along walkways/roadways.</p>
	<b>Railways</b>	<p><b>Accept Risk</b> – There are no rail lines running through the municipality. The risk to residents is minimal as the closest line is southeast of the municipality. Would require winds from the southeast during a rail emergency for any hazardous materials to carry over South Huron.</p> <p>Prevailing winds are from the northwest.</p>
	<b>Road Network</b>	<p><b>Avoid and Mitigate Risk</b> – The network of roads is continually being upgraded and improved. Main core of roads is becoming increasingly gridlocked during summer months due to tourism.</p> <p>SHFD should work with the traffic services department if it identifies intersections that would benefit from Emergency Vehicle Pre-emption (EVP) or if traffic lights are not being activated at some intersections by the emitters on the fire apparatus.</p> <p>The SHFD should be made aware when traffic circles are being proposed in new developments to ensure that the fire apparatus' turning radius is able to navigate the circle in a safe manner.</p>

Mandatory Profiles	Top Risk or Issues/ Concerns	Preferred Treatment Option
		When a roundabout improves traffic flow, they thereby improve fire department response times and decrease the incidents of motor vehicle collisions (MVCs). <sup>13</sup>
Building Stock Profile	Fires	<b>Avoid and Mitigate Risk</b> – When conducting inspections, take the opportunity to provide public education on the advantages of completing preventive maintenance to mechanical and electrical equipment to reduce the risk of incurring a fire due to design/ construction/ maintenance deficiencies or mechanical/ electrical failures, including fires caused by processing equipment as well as the misuse of ignition source/ materials first ignited.
	Larger Higher Structures  <i>Response protocols and training</i>	Avoid and Mitigate Risk – The town is in the process of amending its height limit of residential structures from three storeys to six storeys. A fire occurring in a structure of these heights may put a strain on fire service resources. The OBC permits structures up to six floors to be built using ordinary construction materials, which limits the time a fire may be contained to the apartment of the fire’s origin. Due to being of wood construction, fire spread could be quite rapid and difficult to contain and control.  May require additional staffing, equipment, and training. The SHFD is currently not providing training on high rise firefighting techniques.

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<https://www.wsdot.wa.gov/Safety/roundabouts/benefits.htm#:~:text=Studies%20have%20shown%20that%20roundabouts%20are%20safer%20than,by%20the%20Insurance%20Institute%20for%20Highway%20Safety%20%28IHS%29.>

Mandatory Profiles	Top Risk or Issues/ Concerns	Preferred Treatment Option
	<p><b>New Building Stock</b></p>	<p><b>Avoid and Mitigate Risk</b> – There should be a working cohesion between the Planning, Building, and Fire Department regarding any new building construction, including renovations to existing building stock.</p> <p>This should include site plans, water supply systems, hazards, roads, and access points, including roundabouts, areas of concern that may compromise public safety (i.e., flood plains and water retention ponds, etc.).</p> <p>Fire prevention should be included in any site and building plan examinations and approvals.</p>
	<p><b>New Building Stock Barns</b></p>	<p><b>Avoid and Mitigate Risk</b> – Some new barns are constructed up to 1000’-long (300 m). Poultry barns in the Dashwood area range from 300 to 400 ‘in length (90 to 120 m). Farms are becoming a major industry.</p> <p>Cattle barns are becoming technologically advanced and very large in size.</p> <p>Recommend working with the farms in developing farm pre-incident plans.</p> <p>Review opportunities to install dry-hydrants if hydrants are not readily available.</p> <p><u><a href="#">Farm Fire and Emergency Sketch (gov.on.ca)</a></u></p> <p><u><a href="#">Ontario Supporting Fire Safety on Farms   Ontario Newsroom</a></u></p>
	<p><b>Inspections &amp; Enforcement</b></p>	<p><b>Avoid and Mitigate Risk</b> – Maintain frequency of fire inspections of high risk and vulnerable sector structures and ensure enforcement</p>



Mandatory Profiles	Top Risk or Issues/ Concerns	Preferred Treatment Option
		<p>of the OFC. Public education may assist in reducing the risk of fire occurring in these occupancies.</p> <p>The Integrated Risk Management Tool is an effective tool in assisting to prioritize the fire inspections and public education.</p> <p><a href="http://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/Communiques/OFM_Com_2014-12.html">http://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/Communiques/OFM_Com_2014-12.html</a></p>
	<b>Fires</b>	<p><b>Avoid and Mitigate Risk</b> – Historical buildings within older areas of the municipality may be of heavy timber construction, thereby providing a higher fire load in the event of a fire.</p> <p>Should be inspected annually. Educate the building’s owner(s) and staff on fire prevention, fire extinguisher use, etc.</p> <p>A schedule for the inspections of vacant structures should be developed and implemented.</p>
	<p><b>Residential Dwellings</b></p> <p><i>Lack of smoke and CO alarms, home escape plans, fire extinguishers, vacant and derelict structures, poor housekeeping practices</i></p>	<p><b>Avoid and Mitigate Risk</b> – Continue public education initiatives promoting smoke/CO alarms, escape plans to the school children, fire extinguishers, and residential sprinklers.</p> <p>Continue to promote the need for well maintained wood burning appliances/chimneys and their cleaning before the season begins.</p> <p>Initiate zero tolerance policy at locations that may have a history of lacking smoke and CO alarms, including the possibility of OFC Part 1 charges being laid.</p>
	<p><b>Residential Dwellings</b></p> <p><i>Smoke and CO Alarms</i></p>	<p><b>Avoid and Mitigate Risk</b> – Many residential structures may have smoke and CO alarms that are past their recommended life span and</p>

Mandatory Profiles	Top Risk or Issues/ Concerns	Preferred Treatment Option
		<p>should be replaced. Smoke alarms have a 10-year life span whereas CO alarms have a 7-year life span.</p> <p>Work with local suppliers educating the public on the requirement to regularly check their smoke and CO alarms.</p>
	<p><b>Fire Inspections</b></p> <p><i>Downtown Core</i></p>	<p><b>Avoid and Mitigate Risk</b> – Conduct annual inspections. Base frequency on the standards of NFPA 1730 or FUS.</p>
	<p><b>Farmland – Vacant structures</b></p>	<p><b>Avoid Risk</b> – Continue to educate property owners on the risks and encourage fire safety plans for both used and unused farm related structures. Promote the need for safe structures including securing, enhancing the structural stability, or removing them.<sup>14</sup></p> <p>The owner(s) of vacant farm structures should ensure they are secure and made safe. The structures should be checked on by the owner periodically to ensure security is maintained.</p>
	<p><b>Heritage Structures</b></p>	<p><b>Avoid Risk</b> – If structure is occupied, conduct fire inspections according to the building classification (high risk – annually, low risk – every third year). Promote smoke alarms and fire extinguishers. Contact property owners to establish what the plans are for the vacant designated heritage structures. Promote the need to securing and making safe any vacant structures.</p>
	<p><b>Residential Inspections</b></p>	<p><b>Avoid and Mitigate</b> – Several firefighters have been trained and certified in NFPA 1031 &amp; 1035.</p>

<sup>14</sup> [https://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/Communiqués/OFM\\_Com\\_2016-07.html](https://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/Communiqués/OFM_Com_2016-07.html)

Mandatory Profiles	Top Risk or Issues/ Concerns	Preferred Treatment Option																					
		<p>The SHFD should tap into these individual’s expertise, to aid in developing and establishing a home/smoke/co alarm inspection program. Doing so will heighten the SHFD’s community image and ensure homes are fire safe. This would be a good opportunity to hand out fire safety messaging in packages that focus on home escape plans, good housekeeping practices, safe cooking, safety on playground equipment, etc.</p>																					
	<p><b>Fire Inspections</b></p> <p><i>Fire Underwriters Inspections Frequency</i></p>	<p><b>Avoid and Mitigate</b> – Currently, the SHFD conducts fire inspections based on the FUS recommended schedule as well as upon request or complaint. There have been some occupancies that have legislated inspections such as the vulnerable occupancies. Schools are receiving public education and conducting annual fire drills.</p> <p>The inspection program falls in line with the Fire Underwriters schedule of inspections. This includes the following:</p> <p>FUS Suggested Inspection Frequency Chart</p>																					
		<table border="1"> <thead> <tr> <th data-bbox="978 951 1440 993">Occupancy Type</th> <th data-bbox="1440 951 1896 993">Benchmark</th> </tr> </thead> <tbody> <tr> <td data-bbox="978 993 1440 1036">Assembly (A)</td> <td data-bbox="1440 993 1896 1036">3 to 6 months</td> </tr> <tr> <td data-bbox="978 1036 1440 1078">Institutional (B)</td> <td data-bbox="1440 1036 1896 1078">12 months</td> </tr> <tr> <td data-bbox="978 1078 1440 1120">Single Family Dwellings (C)</td> <td data-bbox="1440 1078 1896 1120">12 months</td> </tr> <tr> <td data-bbox="978 1120 1440 1162">Multi-Family Dwellings (C)</td> <td data-bbox="1440 1120 1896 1162">6 months</td> </tr> <tr> <td data-bbox="978 1162 1440 1205">Hotel/Motel (C)</td> <td data-bbox="1440 1162 1896 1205">6 months</td> </tr> <tr> <td data-bbox="978 1205 1440 1247">Mobile Homes &amp; Trailers (C)</td> <td data-bbox="1440 1205 1896 1247">6 months</td> </tr> <tr> <td data-bbox="978 1247 1440 1289">Seasonal/Rec. Dwellings (C)</td> <td data-bbox="1440 1247 1896 1289">6 months</td> </tr> <tr> <td data-bbox="978 1289 1440 1331">Commercial (F)</td> <td data-bbox="1440 1289 1896 1331">12 months</td> </tr> <tr> <td data-bbox="978 1331 1440 1378">Industrial (F)</td> <td data-bbox="1440 1331 1896 1378">3 to 6 months</td> </tr> </tbody> </table>	Occupancy Type	Benchmark	Assembly (A)	3 to 6 months	Institutional (B)	12 months	Single Family Dwellings (C)	12 months	Multi-Family Dwellings (C)	6 months	Hotel/Motel (C)	6 months	Mobile Homes & Trailers (C)	6 months	Seasonal/Rec. Dwellings (C)	6 months	Commercial (F)	12 months	Industrial (F)	3 to 6 months	
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		Multi-Family Dwellings (C)	6 months																				
		Hotel/Motel (C)	6 months																				
		Mobile Homes & Trailers (C)	6 months																				
Seasonal/Rec. Dwellings (C)	6 months																						
Commercial (F)	12 months																						
Industrial (F)	3 to 6 months																						

Mandatory Profiles	Top Risk or Issues/ Concerns	Preferred Treatment Option
	<p><b>Vulnerable Occupancies</b></p> <p><i>Inspections and enforcement</i></p>	<p><b>Avoid Risk</b> – Continue to provide public education on escape planning. Train personnel of fire extinguisher usage. Know and practice escape routes out of building. Address the needs of those that may have mobility and cognitive behavioral issues in escaping a fire.</p> <p>There are currently eight vulnerable occupancies in South Huron. Follow legislated direction including the need for Fire Safety Plans, practice patient movement techniques including horizontal and vertical evacuation procedures, fire safety education, and conduct escape drills. The development of pre-incident plans for these occupancies would be of great assistance to the Incident Commander should there be an emergency at any of these locations. Recommend the installation of sprinklers where possible.</p>
	<p><b>Wind Farms</b></p> <p><i>Response protocols</i></p>	<p><b>Accept and Mitigate Risk</b> – There are two wind farms in South Huron that operate a total of 58 wind turbines. There are numerous codes, regulations and standards that govern the installation of wind turbines. Applications must be submitted under the Ministry of Environment’s, <i>Environmental Protection Act, O, Reg. 359/09</i>, requiring the completion of the application for a <i>Renewable Energy Approval (REA)</i>, and approvals of other ministries such as the Ministry of Natural Resources and Forestry.</p> <p>The Canadian Standards Association (CSA) has a guide to Canadian wind turbine codes and standards that need to be followed to aid in ensuring compliance in the construction and use of turbines in</p>

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		<p>Canada. There are several CSA codes and standards that should be adhered to by the companies developing the wind farm.</p> <p>The units are 99.5 metres high, and the blades are 55 metres long with a rotor diameter of 113 metres.</p> <p>Rescues or fires in structures of this height and complexity are challenging for fire services.</p> <p>If a fire were to occur, most fire services will not risk the lives of firefighters to scale the structure in the event of a catastrophic failure. Due to the size of each unit a very large collapse zone must be established.</p> <p>The South Huron firefighters are trained to the awareness level on the operations of the units and the company that owns the turbine response team capabilities.</p> <p>SHFD does not perform high angle rescues, but due to the length of time a rescue team from the company involved arrives, it could be of a long duration.</p> <p>All policies and SOGs regarding responses to wind farms should be reviewed and maintained current.</p> <p>SHFD should have a pre-incident plan in place for every type of emergency involving wind turbines, that includes the names of fire services that may be able to perform a high angle rescue.</p>
	<p><b>Illegal Second Units</b></p>	<p><b>Mitigate the Risk</b> – There could be an unknown number of illegal second units in the municipality. Students may stay at low-cost accommodations which may not be legal and lack proper fire safety</p>

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		<p>features/measures. There could be residences that are being used for the rental of rooms to students that are illegal.</p> <p>Through the <i>Affordable Housing Act, 2011</i>, the province amended the <i>Planning Act</i> to require that municipalities to allow second residential units in detached, semi-detached, and rowhouse units. South Huron’s Zoning By-Law, 69-2018, permits second suits and identifies local requirements to meet specific needs within the municipality.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Fire Stations</i></p>	<p><b>Avoid and Mitigate Risk</b> – A comprehensive review of the condition of, and location of, the fire stations is available within the Fire Master Plan.</p> <p>Some of the stations are of such vintage they should be replaced while others may require updates and renovations to bring it up industry standards for a volunteer fire station.</p> <p>Consideration should be included for the re-location of stations in respect to the needs and circumstances of the community to improve response times, while also taking into consideration the availability of firefighters in those areas.</p>
	<p><b>Fires</b></p> <p><i>Residential Sprinkler Systems</i></p>	<p><b>Mitigate Risk</b> – Recommended that the Fire Prevention Division promote the value of residential sprinkler systems. Statistics show that residential sprinklers save lives and reduce fire loss. In turn, property owners will reap savings on insurance costs and see an increase in the property value.</p> <p>It is suggested that focus be on installing them during major renovations or new builds. With new residential developments, the</p>

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		<p>Fire Prevention Division could work with the developer in promoting residential sprinklers as an “add on” in new home construction.</p> <p>The Canadian Automatic Sprinkler Association, who is a member of the Home Fire Sprinkler Coalition of Canada, states the installation of sprinklers will cost approx. \$1.35/ ft<sup>2</sup> and add between 1 to 1.5% to the total building cost in new construction.</p> <p><a href="http://homefiresprinklercanada.ca">Home Fire Sprinkler Protection — Home Fire Sprinkler Coalition Canada (homefiresprinklercanada.ca)</a></p>
<p><b>Critical Infrastructure Profile</b></p>	<p><b>Electricity</b></p> <p><i>Loss of power</i></p>	<p><b>Accept Risk</b> – Loss of power will adversely affect all forms of daily life. Businesses, schools, industries, residences, emergency services all rely heavily on power.</p> <p>Loss of power at water pumping stations may result in a reduction of water supply for firefighting purposes if the back-up power supply fails.</p> <p>The advantages of having an automatic stand-by power supply should be promoted to the community.</p>
	<p><b>Water</b></p> <p><i>System failures</i></p>	<p><b>Accept Risk</b> – Continue the proactive approach in preventing a failure of potable drinking water from water supply system.</p> <p>Failure due to mechanical or human means will place the community at risk for public safety. Will affect healthcare, schools, commerce, etc.</p>
	<p><b>Water</b></p> <p><i>Infrastructure</i></p>	<p><b>Avoid and Mitigate</b> – South Huron draws its water supply from Lake Huron via the Lake Huron Primary Water Supply System. Water is piped to numerous communities in South Huron and does not go east of Exeter to an area formerly known as Osborne Township.</p>

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		<p>Most of the former wells have been decommissioned since water is now drawn from Lake Huron.</p> <p>Minimum size for all new water mains is 150 mm (6"). There are two above ground and two below ground water reservoirs that contain up to five days worth of water.</p> <p>Water is not supplied to the Osborne Ward as the ground water is plentiful and of very good quality.</p> <p>Proactively replacing older, poor-quality mains to reduce the number of repairs each year due to leakage or a failure of the water main itself.</p>
	<p><b>Water</b></p> <p><i>Hydrants</i></p>	<p><b>Avoid and Mitigate</b> – South Huron supplies water to the populated areas and has approximately 348 hydrants in service.</p> <p>All hydrants should be inspected and tested as required in Articles 6.6.5.2. through 6.6.5.7. of Ontario Regulation 213/07 of the <i>Municipal Act</i>. NFPA 24, <i>Standard for the Installation of Private Fire Service Mains Their Appurtenances</i>, along with NFPA 291, <i>Recommended Practices of Fire Flow Testing and Marking of Hydrants</i>.</p> <p>Hydrants out of service should be repaired and placed in service in a timely manner. The SHFD should be notified of hydrants that are out of service and a time when they will be back in service.</p> <p>Hydrants on private property are technically the responsibility of the property owner to maintain. South Huron’s Water Dept will execute repairs and invoice the property owner. This the preferred method</p>



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		<p>of maintaining these hydrants so personnel working on them are qualified and take ownership of their work.</p> <p>To aid in locating hydrants at night and during the winter months, reflectors and/or markers have been installed on them.</p> <p>The SHFD promotes co-operation of residents by ensuring hydrants are clear of vegetation and snow to make them more visible and unobstructed.</p> <p>There are no cisterns but there are up to six dry hydrants available in South Huron. These are primarily to the east of Exeter, and some are located on private property but available to SHFD. There is no maintenance or inspection program in place. A program should be implemented for the inspection of the piping to ensure its integrity and prevent failure during usage. The intake grates should also be inspected to ensure no damage and to maintain clearance of any debris or vegetation that may impede water entering the pipe.</p> <p>South Huron has implemented a standard for the type of hydrants to be installed in all new developments. Each hydrant has two 65 mm discharge ports and one 100 mm discharge port with Storz fittings.</p>
	<p><b>Emergency Standby Back-Up Power Supply</b></p> <p><i>Fire Stations</i></p>	<p><b>Avoid and Mitigate</b> – There is no automatic standby emergency generator to supply power to the Huron Park Fire Station. The Dashwood Station has a generator, but a firefighter must attend the station to start it and plug it into the electrical system. An automatic generator will energize a structure as soon as there is a power failure. Lack of power supply will result in a delayed response as the overhead doors will need to be manually opened; there will be a lack of lighting which could result in slips and falls as the firefighters</p>

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		<p>cannot see their way in the building which could result in an injury; the radio system will be down; etc.</p> <p>An automatic emergency generator should be installed in all the fire stations as they do not meet current industry standards without one.</p>
	<p><b>Telecommunications</b></p>	<p><b>Accept Risk</b> – Loss of cell phone coverage in the municipality. Municipality should work with cell phone communication companies to explore opportunities of improving coverage and a means of maintaining continuous operation.</p>
	<p><b>Natural Gas</b></p>	<p><b>Accept Risk</b> – Loss of supply of natural gas in the event of transmission line breakages. Work with local service authorities in relation to public education initiatives in such events.</p> <p>Ongoing risk of leaks/accidents involving distribution and use of natural gas.</p>
	<p><b>Liquified Petroleum Gases</b></p> <p><i>Propane</i></p>	<p><b>Accept Risk</b> – Risk of leaks/accidents involving propane. Involve local suppliers in providing public education on proper means of transporting, storing, and connecting of hose lines.</p> <p>Promote safe BBQ and portable stove usage to prevent leaks and fires involving propane tanks.</p>
	<p><b>Continuity of Government</b></p>	<p><b>Avoid and Mitigate</b> – During implementation of the emergency plan, staff unable to attend work locations due to a weather event, pandemic, etc. Permit municipal staff to access the computer network from home, allowing completion of work responsibilities remotely.</p>

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Demographic Profile	<p><b>Senior Citizens</b></p>	<p><b>Avoid Risk</b> – Continue public education targeted at seniors in the community. This could be achieved by joining senior’s groups and service clubs.</p>
	<p><b>Senior Citizens</b></p> <p><i>Vulnerable Occupancies</i></p>	<p><b>Avoid and Mitigate Risk</b> – Explore opportunities of involving seniors of the community in providing public education to their peers during club meetings, special events held in their residential building, and promotional events such as fire prevention week. Retired educators and/or firefighters would be great ambassadors of the fire service while providing this public education.</p> <p>Further public education opportunities should discuss the following topics of interest: importance of working smoke and CO alarms; emergency preparedness in the event of evacuation, prolonged power loss, or severe weather events; safe cooking practices, dangers of using oils and grease for cooking; develop and practice an escape plan for their place of residency; how to extinguish a cooking fire; fall prevention; how to operate a fire extinguisher; burn prevention; etc.</p>
	<p><b>Municipality of South Huron</b></p> <p><i>Engaging the senior populous</i></p>	<p><b>Accept Risk-</b> The Municipality of South Huron recognizes the contributions their seniors have provided the community over many years and continues to acknowledge their ongoing contributions.</p> <p>Have an Age-Friendly Community Plan in which the municipality works with community partners to undertake projects and deliver programs that enable older people to enjoy health and continue to participate in the communities.</p> <p>Support the seniors through a Tele-Check Program; this is a program whereby a senior may sign up for a periodic phone call to ensure</p>

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		<p>their well being and obtain any supplies they may require, through a dedicated group of volunteers.</p> <p>Provide two-hour sessions whereby seniors may listen to presenters on a variety of topics of interest to this demographic, all in the interest of keeping seniors engaged and involved in their community.</p>
	<p><b>General Population</b></p> <p><i>Growth between 2018 and 2046</i></p>	<p><b>Accept the Risk</b> – Ontario growth projections for Huron County indicate a rate of growth of between 0 and 15%, between 2018 and 2046.</p> <p>Meanwhile Ontario’s growth is estimated to be 38% or over 5.4 million over the next 28 years, from an estimated 14.3 million in 2018 to 19.8 million by 2046.</p> <p>Between 2018 and 2046, the seniors populous in Huron County will see a growth rate of 50 to 70%. By 2046 it is estimated that over 35% of the population of the County will be seniors.<sup>15</sup></p>
	<p><b>Immigrant Population</b></p> <p><i>Fire Safety Programs</i></p>	<p><b>Avoid and Mitigate</b> – There are a low number of immigrants in the South Huron area. It is suggested that the SHFD Fire Prevention acquire pamphlets available in the prominent languages of the community. These could be provided to support groups/religious groups/community centres for distribution.</p> <p>Work towards additional bi-lingual/ diverse staff of Fire Prevention/Public Fire Life Safety Educators (FP/PFLSEs) that reflect the makeup of the multi-cultural community. This would be a</p>

<sup>15</sup> [Ontario Population Projections, 2019–2046 \(gov.on.ca\)](http://www.gov.on.ca)

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		<p>positive impression on those attending a public education event. This would also include running certified courses for the community under an agreement with the OFMEM as a point of entry.</p> <p>Another option is the contractual employment of personnel to assist the FP/PLFSE with interpreting and delivering the fire prevention messages. This may require various individuals to meet the diversity of the population.</p>
	<p><b>Youth</b></p> <p><i>Juvenile fire starters</i></p>	<p><b>Avoid and Mitigate</b> – Provide fire safety educational material to Community Youth Groups/Centres for their distribution. This may include career education material focused for youth.</p> <p>Some fire services have implemented junior firefighter programs for the youth to assist around the fire stations and learn about fire safety and firefighting.</p> <p>This may interest some youth to pursue firefighting as a as a volunteer or possibly as a career.</p>
	<p><b>Schools</b></p> <p><i>Public Education programs for schools</i></p>	<p><b>Avoid and Mitigate</b> – Continue to promote fire safety through developing and rehearsing a home escape plan; teaching children how to crawl on the floor through smoke; dangers of playing with ignition sources; and conducting a fire drill at the schools.</p> <p>Other topics that are discussed within the schools include 9-1-1, smoke alarms, fire safety in the home, safe cooking practises, playground safety, injury prevention, Emergency Preparedness, carbon monoxide safety, Learn Not to Burn Program, Risk Watch program, etc.</p>

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	<b>Residents</b>	<p><b>Avoid and Mitigate Risk</b> – Between 2011 and 2016, it is estimated that the population of South Huron increased by approximately 100 residents. With numerous residential developments in the process of approval, they will produce an increase in the population.</p> <p>SHFD should monitor call volumes and response times to ensure a constant level of service.</p>
	<b>Seasonal Residents</b>	<p><b>Avoid and Mitigate Risk</b> – Continue the public education initiative promoting smoke and CO alarms, escape plans, fire extinguishers. Residents may not be aware of the address they are at; suggest it be written out and posted near a phone.</p> <p>Even though the number of seasonal residents is low, the SHFD should continue to target areas where residents reside, shop, and frequent with appropriate fire safety material such as brochures and pamphlets.</p>
	<b>Residents – lines of communications</b>	<p><b>Avoid and Mitigate</b> – Enhance lines of communication regarding open air burning permits, fireworks by-laws, public education, and fire prevention topics of interest. Provide updates on SHFD activities.</p>
	<b>Residents – lines of communications</b>	<p><b>Mitigate Risk</b> – An additional means of communicating directly to the public during an emergency through “Reverse 911”. This would involve a recorded message being sent out via landline to occupants of structures that may be directly affected by an emergency, be it predicted or an active event. Some municipalities have access to the Alert Ready notification system to issue messages of importance.</p>

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		Some private companies have developed notification systems that some municipalities in Ontario are using. Residents would sign up for such notification through this means of technology.
	<b>University and College Student Population</b>	<b>Avoid and Mitigate</b> – Dependent on the number of college/university students residing in South Huron, develop and deliver a presentation to university and college students during orientation week regarding fire safety systems in the buildings, escape plans, fire extinguishers and hose cabinets, location of pull stations, dangers of unattended candles and smoker’s articles, etc.
<b>Hazard Profile</b>	<p><b>Weather Event</b></p> <p><i>Tornadoes, ice and snowstorms, extreme heat and cold events, intense rainstorms, flooding.</i></p>	<p><b>Accept Risk</b> – Although these cannot be completely avoided, they can, in most cases, be predicted which will allow for public awareness through media releases.</p> <p>Promote the need for families to maintain 72-hours worth of food, drinking water, and cash in the event of losing power for long duration.</p> <p>Due to the municipality’s location within what is known as tornado alley of southwestern Ontario, consideration should be given to the installation of storm sirens in build up residential areas.</p>
	<p><b>Municipality of South Huron</b></p> <p><i>Weather event / evacuation centres</i></p>	<p><b>Avoid and Mitigate Risk</b> – During a weather event such a tornado or snowstorm, residents and transient public may need a location to take refuge for a duration of time.</p> <p>Evacuation centres should be equipped with an emergency stand-by generator capable to energizing the entire building. A power outage in South Huron has been known to last up to 48 hrs. Residents need</p>

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		<p>a warm and safe location to go to, that has capabilities of food being served, people may take a shower and have Wi-Fi available so people may access the internet to send messages or make phone calls.</p> <p>Neither the Dashwood nor Crediton Community Centres have emergency generators.</p>
	<p><b>Municipality of South Huron</b></p> <p><i>Domestic Terrorism</i></p>	<p><b>Avoid and Transfer Risk</b> – The threat of domestic terrorism is now occurring in Canada with numerous incidents creating havoc and terror amongst the populous. Situations have occurred in several Canadian cities with catastrophic consequences. Active shooter incidents may occur in factories, schools, supermarkets and within the family home.</p> <p>Within NFPA 3000 - Standard for an Active Shooter/Hostile Event Response (ASHER) Program, defines ASHER as <i>“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.”</i></p> <p>It further describes the ASHER Program as <i>“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.”</i></p>



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		<p>Often communities wait until an event has occurred with catastrophic consequences and loss of life before they identify the need for public education/preparedness in handling such incidents.</p> <p>Emergency responders and community groups should work together in developing and delivering education programs to the responders and public at large on avoiding or mitigating a situation to preserve life and prevent further harm from occurring. Programs have already been developed by communities in Canada and it is a matter of tapping into such resources.</p> <p>Reference materials include <i>NFPA 1600 – Standard on Continuity, Emergency, and Crisis Management</i> and the <i>Emergency Management Standard</i> that has been developed by the Emergency Management Accreditation Program (EMAP) in the United States.</p>
	<p><b>Motor Vehicle Collisions</b></p>	<p><b>Accept Risk</b> – Mass casualties and road closures of long durations. Fire service to assess roads and frequency of events to ensure they are prepared for any type of event.</p> <p>Establish a reporting structure within municipal departments that enables planners to see where and why MVCs occur on municipal roads.</p>
<p><b>Public Safety Response Profile</b></p>	<p><b>South Huron Fire Department</b></p> <p><i>Rural water supply</i></p>	<p><b>Avoid and Mitigate Risk</b> – The SHFD once achieved their Superior Tanker Shuttle Accreditation from Fire Underwriters (FUS), which has expired. Having this accreditation assists in lowering insurance premiums to those living outside of the built-up areas.</p> <p>The SHFD should contact FUS and prepare to be evaluated to become reaccredited.</p>

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	<p><b>South Huron Fire Department</b></p> <p><i>Establishing &amp; Regulating By-Law</i></p>	<p><b>Avoid and Mitigate Risk</b> – Municipalities are permitted under the <i>Fire Protection &amp; Prevention Act</i>, 1997 to form a fire department under Article 5 (0.1) The council of a municipality may establish, maintain, and operate a fire department for all or any part of the municipality. 2001, c. 25, s. 475 (2).<sup>16</sup></p> <p>The establishment of a fire department is done by way of an Establishing &amp; Regulating By-Law (<a href="http://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/PublicFireSafetyGuidelines/01-03-12.html">http://www.mcscs.jus.gov.on.ca/english/FireMarshal/FireServiceResources/PublicFireSafetyGuidelines/01-03-12.html</a>).</p> <p>Best practice is that the By-Law be reviewed annually, and revisions completed that reflect any changes in the needs and circumstances of the community. The By-Law should reference applicable NFPA Standards, the Vision, Mission, and Values Statements, along with any goals that may be set forth, and the expectations of a comprehensive fire prevention program. It should also reflect the expected outcomes of the smoke and CO alarm programs.</p> <p>Job descriptions for all positions within the department should be reviewed, updated, and included in the E&amp;R By-Law.</p> <p>The latest E&amp;R By-Law for the SHFD came into effect in May of 2006. There is a need for it to reviewed and updated accordingly.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>NFPA 1720</i></p>	<p><b>Avoid and Mitigate Risk</b> – NFPA 1720 (2020 Edition), <i>Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public</i></p>

<sup>16</sup> <https://www.ontario.ca/laws/statute/97f04#BK6>

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		<p><i>by Volunteer Fire Departments</i>, states that areas with a population of &lt;500 people /mi<sup>2</sup> (2.6 km<sup>2</sup>) should strive to have six firefighters on the scene of a residential structure fire within 14 minutes. The population density of South Huron is 23.4/ km<sup>2</sup> (61 / mi<sup>2</sup>) based on 2016 Census Canada Data.</p> <p>The SHFD currently does not meet NFPA 1720 Standards for response times.</p> <p>The SHFD should monitor response times to achieve six firefighters on the scene, within 14 minutes.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Live fire training</i></p>	<p><b>Avoid and Mitigate Risk</b> – Many rural fire services are often offered the use of buildings that are abandoned or destined for demolition. These opportunities allow firefighters to ability to hone their skill sets in many fire fighting disciplines including search &amp; rescue, ventilation, fire attack, building construction, tanker operations, pumper operation, etc.</p> <p>Due to the dilapidated condition of these structures, the health &amp; safety of those participating is paramount. Before any training is permitted at such locations, the SHFD should conduct an audit of the structure to ensure it is suitable for such training.</p> <p>The following Ontario Ministry of Labour, Section 21, Guidance Note, 7-5, <i>Live Fire Training Considerations for Acquired Structures</i>, and NFPA Standards 1402, <i>Standard on Facilities for Fire Training and Associated Props</i>, and 1403, <i>Standard on Live Fire Training Evolutions</i>, should be reviewed to ensure compliance, before any training opportunities in vacant structures takes place.</p>

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	<p><b>Municipality of South Huron</b></p> <p><i>Emergency Response Program</i></p>	<p><b>Avoid and Mitigate Risk</b> – Under the <i>Emergency Management &amp; Civil Protection Act</i> R.S.O. 1990, municipalities must have an Emergency Response Plan. The plan is to be reviewed and updated yearly, along with training exercises completed. The ERP was last updated in 2017. A section should be designated for recording any changes to the plan and the date these occurred and by whom (<a href="https://www.ontario.ca/laws/statute/90e09#BK4">https://www.ontario.ca/laws/statute/90e09#BK4</a>).</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Foam capabilities for flammable liquid fires</i></p>	<p><b>Avoid and Mitigate Risk</b> – SHFD currently does not carry Class B foam concentrate, for flammable liquid fires, on their apparatus for the mitigation of petroleum-based, flammable chemicals, and some vehicle fires.</p> <p>There is a bulk fuel tank farm in South Huron which in case of a fire taking place may require copious quantities of Class B foam to suppress and extinguish. The SHFD should review its foam capabilities and consider acquiring a supply of Class B foam concentrate.</p> <p>At present, only Class A foam concentrate is carried on the SHFD apparatus for use on ordinary combustibles.</p>
	<p><b>Municipality of South Huron</b></p> <p><i>Marine Emergencies</i></p>	<p><b>Avoid and Mitigate Risk</b> – South Huron has approximately 3 km of shoreline on Lake Huron that they are responsible for. Permanent residency is prominent along the shoreline. SHFD does not conduct offshore marine rescues. Arrangements should be made with neighbouring departments that do conduct marine related rescues to attend in support of SHFD.</p>

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		<p>SHFD does not have plans in acquiring a marine vessel for rescue / firefighting. The OPP and Canadian Coast Guard have vessels in the immediate area to assist in mitigating such emergencies.</p> <p>The fees by-law should be amended to reflect full cost recovery for such responses.</p>
	<p><b>Municipality of South Huron</b></p> <p><i>Emergency Operation &amp; Evacuation Centres</i></p>	<p><b>Avoid and Mitigate Risk</b> – The Municipality’s primary and secondary Emergency Operations Centre have emergency back-up power generators.</p> <p>The primary evacuation centre has an emergency back-up power generator. The secondary and tertiary centres do not have an emergency power supply.</p> <p>The Administration Centre, which is also the primary EOC, has a back-up generator in place.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Emergency back-up power supply at the stations.</i></p>	<p><b>Avoid and Mitigate Risk</b> – Not all the fire stations have emergency power back-up using an on-site generator. A generator is available at the Exeter and Huron Park fire stations. There is no generator at the Dashwood fire station.</p> <p>All stations should have emergency back-up power supplied throughout the building.</p>
	<p><b>Municipality of South Huron</b></p> <p><i>Emergency Operation Centres</i></p>	<p><b>Avoid and Mitigate Risk</b> – The Municipality of South Huron’s EOCs amenities to operate as an EOC should be reviewed and updated with the latest technological and communications equipment.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Response Protocols</i></p>	<p><b>Avoid and Mitigate Risk</b> – The Fire Chief should develop response protocols regarding the types and quantity of apparatus that should</p>

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		<p>respond to the call types established in the dispatch CAD at Tillsonburg Fire Dispatch.</p> <p>Doing so will control the number of apparatuses responding and ensure fire protection coverage for the Municipality.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Response protocols to vacant structures</i></p>	<p><b>Avoid and Mitigate Risk</b> – As with many municipalities, and especially during the COVID-19 Pandemic, many businesses have ceased operations, the building may become vacant and not maintained for a long duration of time.</p> <p>If they are not maintained and kept secure, they may fall victim to arson or vandalism. Fire Prevention should monitor these occupancies and response protocols developed and communicated to the firefighters for each structure that is either in/or becomes a state of disrepair.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Apparatus and Equipment</i></p>	<p><b>Avoid and Mitigate Risk</b> – For a fire service to be able to provide fire protection to its community requires safe and reliable equipment and apparatus that is in a constant state of readiness.</p> <p>SHFD requires an apparatus and equipment replacement schedule with funds set aside in a reserve account each year for future purchases. When a new apparatus is purchased, an assessment of equipment to be placed on it should be conducted ahead of its arrival and equipment nearing the end of its life span should be replaced.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Mainstream Media / Social Media</i></p>	<p><b>Avoid and Mitigate Risk</b> – Mainstream media such as radio/TV/newspapers should continue to be used to the advantage of the fire service in sending out fire prevention and public</p>

Mandatory Profiles	Top Risk or Issues/ Concerns	Preferred Treatment Option
	<p><b>South Huron Fire Department</b></p> <p><i>Standard Operating Guidelines/Policies</i></p>	<p>education messaging. This is especially prudent to reach out to new residents and those with language barriers.</p> <p><b>Avoid and Mitigate Risk</b> – Fire department policies and guidelines have enormous value for a department. The backbone of any fire service is its policies, Standard Operating Procedures (SOPs) and Standard Operating Guidelines (SOGs), which govern and provide direction on its operations.</p> <p><i>A policy</i> is a high-level statement that expects consistent compliance. There is very little to no leeway permitted with a policy.</p> <p><i>A guideline</i> is a standard with an acceptable level of quality or attainment on how to act in a given situation with non-mandatory controls.</p> <p><i>A procedure</i> is a standard with an acceptable level of quality or attainment in a series of detailed steps to accomplish an end. There are step-by-step instructions for implementation.</p> <p>SHFD’s SOGs, while numerous and encompassing, are not current and thorough. To ensure all the SOGs are current, the Fire Chief should review and revise existing policies and SOGs regularly and develop new policies and SOGs as required. For example, some fire departments review a third of the SOGs annually so that the entire document is reviewed every three years.</p> <p>The review of the SOGs is a very involved process and the Fire Chief should not take this task on by themselves. The establishment of an SOG Committee that establishes its own Terms of Reference would be a great asset to the department in many ways. The SOGs would</p>

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		<p>be updated and current, staff are more involved in the department's operations, and finally provides a safer environment for members of the department to work in.</p> <p>A good source of information is the Section 21 Guidance notes that are kept current by a provincial team of fire service personnel. The Section 21 Committee is part of the <i>Health and Safety Act</i> initiative for fire fighter safety. A good regiment to adhere to is by having an SOG/Policy in place for each Sec. 21, GN.</p> <p>For a fire department to operate in a safe and efficient manner, it is imperative that all members adhere to all policies, SOGs and SOPs and those that fail to do so should be held accountable.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Daytime fire fighter availability</i></p>	<p><b>Avoid and Mitigate</b> – Like so many other fire services in Ontario, SHFD may have problems with personnel being available to respond Monday to Friday from 8 a.m. to 5 p.m. SHFD is being proactive to ensure adequate staffing in the response procedure, whereby multiple stations are to be dispatched to all fire calls. When multiple stations are dispatched during the daytime, this takes one of the stations away from protecting their immediate response area. A means of lessening the need to dispatch multiple stations would be the increase of staffing at each station to a compliment of 30 firefighters.</p> <p>With the prevalence of low attendance during the daytime hours, additional firefighters will assist in covering off the shortfall of responders.</p> <p>SHFD should initiate a sustainable firefighter recruitment and retention program. Recruitments should focus on attracting new</p>



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		<p>members who are available during daytime hours and live within the municipality or a limit of 2 km from the municipal boundaries.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Technical rescue response capabilities</i></p>	<p><b>Avoid and Mitigate Risk</b> – SHFD currently does not perform technical rescues such as off-shore ice-water, trench, low/high level rope rescue, confined space rescue, or swift water rescue. They also do not mitigate hazardous materials incidents. Firefighters are trained to the Awareness Level for Hazardous Materials responses, which restricts their active participation in this discipline.</p> <p>Water rescues are shore-based only, and the department is not trained in elevator rescues.</p> <p>The SHFD should review the costs associated with establishing a team versus the risk in the community and assess if there is an opportunity to share these costs with fire departments in the area through an automatic/mutual aid agreement.</p> <p>The SHFD should initiate training on the following Technical Rescue disciplines to a minimum of the awareness level: confined space, trench rescue, low/high angle rope, and elevator.</p> <p>Completion of this training will bring the department in compliance with the Ontario Fire Service Health and Safety Advisory Committee’s Guidance Notes, which are required under Section 21 of the <i>Occupational Health and Safety Act</i>. The department should also review <i>NFPA 1670, Standard on Operations and Training for technical Search and Rescue Incidents</i>.</p> <p>Procedures should be in place for the activation of outside resources to attend these types of incidents in the form of a response</p>

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		<p>agreement with another fire service or a contractual agreement with a third-party.</p> <p>This may include the necessity of calling the Provincial EOC and requesting assistance from the closest agency that performs such rescues/mitigations, which may result in a lengthy response time.</p> <p>The Municipality's Fees By-Law should be amended to permit the full cost recovery for expenses that may be incurred by these types of incidents.</p>
	<p><b>Municipality of South Huron</b></p> <p><i>Deputy Fire Chief</i></p>	<p><b>Avoid Risk</b> - To further assist the Fire Chief with operational and on-call duties, and to also take over as Fire Chief during the Fire Chief's absences, the Municipality of South Huron should hire a Deputy Fire Chief on a part-time basis, working in the office to a maximum of 24 hours per week. This part-time Deputy Chief could respond to emergencies as directed after hours and remuneration for such shall be established by Council.</p> <p>The role of the Fire Chief has an ever-increasing workload and to expect a volunteer District Chief to take on many of these duties may be too demanding of their time. Further, a Deputy Chief position would better define the organizational structure of the Fire Department.</p> <p>When a District Fire Chief is the acting Fire Chief, this may cause undue hardship between the current District Chiefs when it comes to providing direction or disciplinary matters. Having a Deputy Fire Chief permits the District Chiefs to focus primarily on their assigned station and related needs.</p>

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		<p>Duties to be assigned to the Deputy Fire Chief would be identified under the Establishing &amp; Regulating By-Law of the SHFD.</p> <p>The District Fire Chiefs would report to the Deputy Fire Chief. Training could also be assigned to the Deputy Chief's role and responsibilities. The Training Officer would then assist with ensuring training is completed as assigned.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Fire prevention &amp; Public Education</i></p>	<p><b>Avoid Risk</b> – SHFD's Fire Prevention Officer is certified to NFPA 1031 <i>Standard for Professional Qualifications for Fire Inspector and Plans Examiner</i>, NFPA 1033, <i>Standard for Professional Qualifications for Fire Investigator</i>, and NFPA 1035, <i>Standard for Fire and Life Safety Educator, Public Information Officer, Youth Fire Starter Intervention Specialist and Youth Fire Starter Program Manager Professional Qualifications</i>.</p> <p>With new residents moving into the town, some will include seniors and immigrants. Fire safety public education events should be developed based on the demographic data on the new residents.</p> <p>These events will assist the SHFD in meeting the objectives of the Three Lines of Defence as implemented by the OFMEM (the first line being Public Education).</p> <p>There are some firefighters of the SHFD that are certified in NFPA 1031 and 1035, who, if required, could be considered in assisting with fire prevention and public education initiatives.</p>
	<p><b>Municipality of South Huron</b></p> <p><i>Farm safety plans</i></p>	<p><b>Avoid Risk</b> – Within a rural area, the Fire Prevention Division should reach out to the farming community and promote the advantages of</p>

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		<p>these groups developing a Fire Safety Plan for their farm like the Perth East Farm Fire Safety Program.</p> <p>SHFD, along with the other member fire departments of the Huron County Mutual Fire Aid System, could partner with farm safety associations to aid in delivering messaging.</p> <p>The OFMEM has a program regarding farm operations and preventing fires (<a href="https://news.ontario.ca/en/release/50863/ontario-supporting-fire-safety-on-farms">https://news.ontario.ca/en/release/50863/ontario-supporting-fire-safety-on-farms</a>)</p> <p>The Ministry of Agriculture, Food, and Rural Affairs also promote a fire safe farming operation through the following website (<a href="http://www.omafra.gov.on.ca/english/engineer/barnfire/toc.pdf">http://www.omafra.gov.on.ca/english/engineer/barnfire/toc.pdf</a>).</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Three Lines of Defence</i></p>	<p><b>Avoid and Mitigate Risk</b> - Due to the time it will take to respond to areas furthest from the fire stations, the Department should promote the Three Lines of Defence to those residents. This could be done through public education, home inspections, etc. as means of connecting with this demographic, along with the distribution of fire prevention educational material.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Huron County Mutual Aid Plan</i></p>	<p><b>Avoid and Mitigate Risk</b> – The SHFD is a member of the Mutual Aid Plan and Program for Huron County, as permitted within the <i>Fire Protection &amp; Prevention Act, 1997</i>.</p> <p>The Municipality of South Huron’s By-Law Number 51-01 (2001) permits their fire department to participate in the Huron County Mutual Aid System. This By-Law should be reviewed and updated.</p>

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	<p><b>South Huron Fire Department</b></p> <p><i>Fire Service response agreements</i></p>	<p><b>Avoid and Mitigate Risk</b> – The SHFD has Fire Protection Agreements in place with surrounding fire services. These should be reviewed and updated accordingly.</p> <p>Within any automatic aid agreements, it should identify any fire safety education, fire prevention and enforcement along with reporting requirements of the department responding into that area.</p> <p>Possibly review opportunities for additional automatic aid agreements to better serve the community.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Smoke and CO alarms</i></p>	<p><b>Avoid and Mitigate</b> – The SHFD keep spare smoke and CO alarms on apparatus in the event they attend a residence they find is lacking working alarms. They should not depart a dwelling that is lacking them without first installing a working alarm. Departing without ensuring the residents have these life safety items may place a risk on the municipality.</p> <p>To offset the expense of purchasing additional alarms for this purpose, there are companies and foundations in the province that donate both smoke and CO alarms to fire services for distribution to residents that require them.</p> <p>Based on provincial Statistics on the residential fires and smoke alarms from 2010 – 2019<sup>17</sup>:</p> <ul style="list-style-type: none"> <li>• 56% of residential loss fires, the smoke alarm operated</li> </ul>

<sup>17</sup> [Smoke Alarm Status in Home Fires | Ministry of the Solicitor General \(gov.on.ca\)](https://www.gov.on.ca)

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		<ul style="list-style-type: none"> <li>• 9% a smoke alarm was present, but the operation was unknown</li> <li>• 14% the alarm did not operate and in 21% of the fires, there were no smoke alarms</li> </ul>
	<p><b>Municipality of South Huron</b></p> <p><i>Fees By-Law</i></p>	<p><b>Avoid and Mitigate Risk</b> – The fees By-Law, while current, could be more inclusive in the fees it could collect as there are several areas responses/ requests that are not included.</p> <p>Examples are full costs recovery when outside fire services are called in not under the Mutual Aid Agreement to mitigate an incident, along with full cost recovery when outside resources are called in to extinguish a fire/ assist at a technical rescue/ fire investigation such as excavators, dump trucks, etc.</p> <p>Fees are an excellent means of revenue generation to offset the operational expenses of the fire service.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Inspections and enforcement</i></p>	<p><b>Avoid and Mitigate</b> – Although there is a level of tolerance in supporting compliance with OFC violations, there needs to be a strong message that violations will be enforced and charges under the Ontario Fire Code could be laid.</p> <p>Successful convictions for fire code violations, that include significant fines, should be publicized in the media, while keeping those involved anonymous.</p> <p>Council should endorse Fire Prevention objectives, through a purposeful approach. These should be included in the E&amp;R By-Law when its updated.</p>

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	<p><b>South Huron Fire Department</b></p> <p><i>Fire Prevention Division Staffing</i></p>	<p><b>Avoid and Mitigate</b> – The SHFD Fire Prevention Branch currently is staffed with one (1) Fire Inspector/ PFLSE. As the municipality grows, the demands on this Division will also increase.</p> <p>The Division should monitor its current and future needs regarding staffing to meet the demands of the growing community.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Documentation of Public Education events</i></p>	<p><b>Avoid Risk</b> – SHFD should, whenever possible, embrace opportunities to interact with the community through public education and fire prevention programs. As the population grows, so does the necessity to meet the demands for additional public education and fire prevention initiatives.</p> <p>Complete an OFMEM Standard Incident Report for each fire prevention/ public education event in which a fire crew attends for statistical purposes only. Document the approximate number of citizens in attendance at each event.</p>
	<p><b>South Huron Fire Department</b></p> <p><i>Pre-Incident Plans</i></p>	<p><b>Avoid Risk</b> – SHFD should develop a pre-incident plan program, with the completion of plans. Resources should be allocated that enable the quality and quantity required of the plans developed to be consistent and current.</p> <p>Focus should be on vulnerable occupancies, industry, main streets with commonly joint buildings, marines, assembly occupancies, campgrounds, fuel storage and retail such as propane and gasoline, and any structures with known hazardous materials.</p> <p>Plans should be completed in compliance with <i>NFPA 1620 – Standard for Pre-Incident Planning</i>.</p>

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	<p><b>South Huron Fire Department</b></p> <p><i>Volunteer firefighter green lights</i></p>	<p><b>Avoid Risk</b> – Initiate a public education program on the use of green flashing lights in volunteer firefighter’s vehicles. Install signage at the entrances to the Municipality identifying the use and purpose of vehicles having green flashing lights and promote motorists to let vehicles exhibiting a green flashing light to safely pass.</p> <p>Additional messaging could be through several social media and press outlets.</p>
	<p><b>Tillsonburg Fire &amp; Rescue Services</b></p> <p><i>Communications Division</i></p>	<p><b>Avoid and Mitigate Risk</b> – The SHFD should communicate any concerns to Tillsonburg Fire regarding their ability to meet the standards established in NFPA 1221, <i>Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems</i>, and NFPA 1061, <i>Standard for Public Safety Telecommunications Personnel Professional Standards</i>.</p> <p>These standards are referenced in the current dispatching services agreement.</p>
	<p><b>Huron County - 911 CERB</b></p> <p><i>Northern 911</i></p>	<p><b>Avoid Risk</b> – Prepare for the Next-generation 911 and its effects on the emergency services in Huron County.</p> <p>Early estimates are that NG-911 system could cost between \$250,000 and \$500,000 which inevitably will be passed onto the clients. This may impact the FD’s budget.</p> <p>Other estimates are \$80 k/ capita (+ / - 25%).</p> <p>Annual operating costs of 25% of the original capital expenses.</p>
	<p><b>Huron County Fire Services</b></p> <p><i>Tiered medical responses</i></p>	<p><b>Avoid and Mitigate Risk</b> – The fire services of Huron County are responding to tiered medical calls under a formal agreement between themselves, CACC London, and the HCPS. The agreement</p>



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		<p>should be reviewed and re-signed by all member departments to ensure there are no areas of the responses that could come into question. The current agreement has been in place for 5 years and lists the call types the SHFD responds to. Appendix A of the agreement could be expanded to provide a higher level of service to the community.</p> <p>There are currently no plans of expanding the service level/types of medical emergencies the SHFD will respond to.</p> <p>The agreement could include the types of medical emergencies they will respond to, when they should be requested to respond, level of training of firefighters, whether any medications could be administered, etc.</p>
	<p><b>Huron County Paramedic Services</b></p> <p><i>Arrival times</i></p>	<p><b>Avoid and Mitigate Risk</b> – Fire Department should monitor response/arrival times of paramedic services and communicate any concerns to the Paramedic Chief.</p> <p>The SHFD should document when the Department arrives at the scene of a medical emergency prior to the paramedics along with the time the firefighters contact the patient.</p> <p>SHFD should promote and take advantage of any joint training opportunities.</p>
<p><b>Community Services Profile</b></p>	<p><b>No concerns</b></p>	<p><b>Accept Risk</b> – There are many community groups who would be more than willing to assist at an emergency incident if requested.</p> <p>Opportunities should be further investigated to partner with a service club in promoting a specific fire safety message. Assistance</p>

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		<p>may be financial or the provision of a location to conduct a fire safety presentation to the public.</p>
<p><b>Economic Profile</b></p>	<p><b>Electricity</b></p> <p><i>Loss of power</i></p>	<p><b>Avoid and Mitigate Risk</b> – Promote to business owners the advantages of having a standby generator, along with clear education around fire safety and CO safety in the event they lose power. Having a generator could prevent the loss of food 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.</p> <p>Loss of electricity in winter has led to cases of desperation whereby residents have resorted to using a BBQ 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 possible death.</p>
	<p><b>Economic Sustainability</b></p>	<p><b>Avoid and Mitigate Risk</b> – The municipality should work towards a vision of sustainable economic growth by effectively leveraging its strengths: excellent transportation connections, proximity to the city of London, a strategic location, a highly skilled and highly educated population, corporate support for economic development, strong growth trajectory, and emphasis on quality of life-quality of place for residents, visitors, and business interests.</p>
	<p><b>Economic Downturn</b></p> <p><i>Due in part to medical events such as epidemics / pandemics</i></p>	<p><b>Avoid and Mitigate Risk</b> – As witnessed with the COVID-19 pandemic, many in the businesses and manufacturing sectors suffered immense monetary losses. Many commercial outlets were permanently closed due to financial difficulties.</p>

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		<p>The Municipal Government will need to work in conjunction with their Provincial and Federal counterparts to support businesses in financial distress during enforced closures.</p> <p>Closures of commercial outlets will result in increased numbers of residents that are unemployed and may require assistance with attaining employment or even further education opportunities.</p>
	<b>Fires</b>	<b>Accept Risk</b> – Loss of business commerce and income to families due to fires. There is also a loss of commerce to other non-affected businesses.
<b>Past Loss and Event History Profile</b>	<p><b>Fires</b></p> <p><i>Cooking fires</i></p>	<p><b>Avoid and Mitigate Risk</b> – Through public education on dangers of unattended cooking, uncleaned or maintained chimneys, aged electrical and mechanical equipment, and lack of good housekeeping practices.</p> <p>Continue providing year-round education on the prevention of kitchen and cooking fires.</p> <p>During festive times of year, fires may occur from dried out Christmas trees getting exposed to hot lights on the tree or an electrical failure of the strand of lights.</p> <p>Fires also caused by candles left burning when residents leave to go out for the night or forget to blow them out before going to bed.</p>
	<p><b>Municipality of South Huron</b></p> <p><i>By-Law 51-2008 Open Air Burning</i></p>	<p><b>Avoid and Mitigate</b> – The municipality currently has a by-law in place that prescribes conditions and times in which open air burning is permitted in South Huron.</p> <p>With the increase in residential suites and population, the SHFD should amend the current by-law to prohibit the burning of leaves</p>

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		<p>and grass clippings in build up residential areas. The smoke from burning leaves is known to cause respiratory events in persons with a history of bronchitis, asthma, chronic obstructive pulmonary decease, and other breathing ailments. Smoke traveling across roadways has been known to impede traffic and possibly cause MVCs.</p> <p>The by-law could also be amended to include approved solid fuel burning appliances such as chimeneas or other appliances that are outfitted with spark arrestors in the chimney and on the opening where wood is introduced into the unit. The by-law should reference OFC Article 2.4.4.4 regarding Open Air Burning.</p>
	<p><b>Municipality of South Huron</b> <i>Fire works By-Law 37- 2004</i></p>	<p><b>Avoid and Mitigate</b> – The fireworks by-law for South Huron was last updated in 2004. This by-law should be reviewed and updated to current standards. The by-law should reference all applicable Provincial and Federal Legislation.</p>
	<p><b>Fires</b> <i>Involving Youth</i></p>	<p><b>Avoid and Mitigate</b> – Fires that have been started by troubled youth may see the individual enrolled into the Juvenile Fire Setter Intervention/ TAPP-C Program. This program includes involvement of family members and should be an active program within the Fire Prevention Branch of SHFD.</p>
	<p><b>Fire Cause Determination</b> <i>NFPA 921</i></p>	<p><b>Avoid and Mitigate</b> – Ensure members of the Department maintain skills with workshops/training in compliance with NFPA 921.</p> <p>Utilize the resources available through the OFMEM or third-party sources on maintaining skill sets in determining fire causes.</p>

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		During investigations, note if there is an ongoing fire cause trend developing and act accordingly.
	<p><b>Fire Cause Determination</b></p> <p><i>Authority to conduct origin &amp; cause investigations</i></p>	<p><b>Avoid and Mitigate</b> – Ensure that those that conduct fire cause and origin investigations are trained in accordance with NFPA 1033, investigations are conducted in accordance with NFPA 921 and have the authority to do so, under the <i>Fire Protection and Prevention Act</i>, 1997, as well as the approval(s) of the Fire Chief and/or Municipality to be involved in such investigations.</p>
	<p><b>Fire Cause Determination</b></p> <p><i>Outside agencies</i></p>	<p><b>Avoid and Mitigate</b> – Notify outside agencies such as the OFMEM, Technical Standards &amp; Safety Authority (TSSA), Electrical Safety Authority, and OPP as required, and/or in accordance with the agency’s directives.</p>
	<p><b>Fire Cause Determination</b></p> <p><i>Origin &amp; cause in officer training program</i></p>	<p><b>Avoid and Mitigate</b> – The Fire Prevention Officer is trained to NFPA 1033, <i>Standard for Professional Qualifications for Fire Investigator</i>, on fire cause and origin determination. With arson and undetermined fires, it would be in the Department’s interest to ensure some of the Operations Officers such as District Chiefs and Captains are also trained in this discipline. In 2019, 75% of the fires were deemed undetermined in cause. In the same year, the ignition source was not determined in 75% of the fires.</p> <p>Having additional members on scene that are trained may observe something that might not normally be noticed and may prompt further investigation by more experienced personnel.</p> <p>Include NFPA 1033 into the Officer Development training program.</p>

## Measurement of Public Education Programs

For any fire safety program to be effective, there should be a method to measure success. This can be achieved through surveys, community groups, fire response data, public forums, etc. The inclusion of external stakeholders in the process provides accurate feedback and statistical information. This may be achieved through a monthly survey/ questionnaire sent out from the fire service. The survey/questionnaire could be sent to a predetermined number of residents for completion that have called upon the fire service for an incident, or other fire department services such as public education, fire inspections, and training.

The survey should include a cover page detailing the purpose of the form sent to them, ensuring that anonymity would be respected. The survey questions should be related to placing the call, response of the crew, and some fire prevention related matters. The ease in which the survey will be completed will dictate the participation rate. Included in the package should be a self-addressed envelope including postage to encourage participation in the process. It is suggested that no surveys be sent to addresses in which the fire service attended for a medical emergency. Alternatively, surveys could be completed online by providing the respondent with a participation code that entitles them to complete the questions.

The Department could investigate the initiation of a community response committee that would meet quarterly to discuss issues in fire service provision and those of public interest involving the fire department. Members would include both internal and external stakeholders such as seniors' groups, a representative of Council, and community leaders. There should be terms of reference developed with goals/objectives and a way to measure outcomes should be established. Such a committee should meet for at least a 2-year mandate, at which time the value of its continuance could be determined.

Some fire services have contracted a third party to conduct a phone survey relating to the fire service provision and fire safety related questions (i.e., *have they required the fire department, for what reason, do they have smoke alarms on every floor, are they tested and cleaned, do they have a CO alarm, etc.*). Prior to the process beginning, it would be advantageous to include a media release so the public may be made aware of the survey taking place. Once completed, responses would then be organized and reviewed.

Larger communities have cable network studios that produce community related productions that are aired on the network. The fire service could work with the company to secure airtime to produce a fire service/safety show. It is either pre-recorded or done live, permitting the public to call in and ask questions about fire safety. Special features and guests provide a good variety and maintain public interest in watching the production through the department's webpage or YouTube productions. Students enrolled in audio/visual courses at high schools or colleges could assist with the production of these programs, which could be posted on the SHFD website or social media.

This would also be an opportunity to speak to emergency planning and what to do in the event of a community related emergency such as a severe weather event (i.e., having emergency supplies on hand, etc.).

If there is no local cable studio, public service announcements could be developed and aired on the local national network. There may also be the opportunity to air a weekly fire safety or emergency preparedness message in the form of an interview.

Within the school system, the Department could team up with a local retailer to provide prizes for a fire safety contest for students. An example would be a home fire escape plan; encourage children to video their family developing a plan, discussing means of escape if a fire were to occur in different parts of the home, practising their escape routes, showing any fire safety equipment they may have such as fire extinguishers and fire escape ladders, and ending in the family meeting at the special location outside the home. A view of the videos will indicate how well the fire safety messaging is being received and shared with all members of the family. The media would be a great medium to promote the contest and publicise the winners.

The Department could partner with local community service groups, associations, and local retailers to deliver fire safety messaging at events such as neighbourhood functions, special speaking engagements, fall fairs, etc. The participation and interest in the messages being delivered will indicate the success of these programs and whether they are worthwhile to continue.

## Community Risk Reduction Planning

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

Aside from the main benefits to the community, a CRRP can contribute positive impacts on the fire department. The CRRP improves firefighters and emergency responder safety and occupational health, along with reducing line-of-duty deaths.

In addition to firefighter safety, there are several other reasons why departments should begin the process of developing a CRRP. These include:

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

A CRRP is not for just fire prevention to be responsible for, it is to include all members of the fire department participation. There are six steps in the development of a CRRP, two of which were identified and completed with the CRA (i.e., Identifying Risks and Prioritizing Risks). The six steps are:

**Identification and Prioritization** – Upon the completion of the CRA, in which the various community risks were identified and the priorities determined, the results should all have documented for use in the remaining planning process. The document does not need to be complex or complicated, but in 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, in some cases, when.
- Who, does the risk affect the most and why?
- How is the community and the fire department affected by the risk?
- What about this risk ranks it higher than others?



**Develop Mitigation Strategies & Tactics** – This requires input with a variety of individuals involved, including those most effected by the risk. Stakeholder involvement is paramount and should always be included in some of the decision-making processes. It will necessitate decisions to determine what tactics and strategies will be necessary to prevent and/or mitigate those risks with the highest priority.

During the development of the plan, there are five elements that should be included:

- **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 stronger enforcement is necessary or if newer codes and standards need adoption. 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** – Changes to the emergency response protocols, SOGs, SOPs, and policies to better meet a specific risk or need. This 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 the risks are identified and prioritized, and strategies and tactics determined for prevention and mitigation, it will be necessary to develop a written plan.

**Implementation of the CRRP** – The implementation of the completed CRRP usually involves several steps. The 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 of both.

**Monitor the Progress, Evaluate Your Findings & Modify the CRRP** – The final step involves monitoring and evaluating the effectiveness of the plan, and making adjustments as necessary. This will enable the organization to determine if they are achieving their desired goals and/or if the plan is having an impact. Ongoing monitoring allows for plan modifications in a timely manner.

The CRRP is a gateway to the reinvention of the fire service culture. It requires buy-in from Council along with visionary, strong leadership to champion needed change and to navigate the process. By having a successful CRRP will bring additional resources to the effort through partnerships within the fire department as well as 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.



# Appendix A:

## Fire Marshal's Communique

## APPENDIX A: FIRE MARSHAL'S COMMUNIQUE

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### ONTARIO REGULATION 378/18 COMMUNITY RISK ASSESSMENT

#### Communiqué 2019-05

July 4, 2019

The Office of the Fire Marshal and Emergency Management (OFMEM) is pleased to announce that the **Ontario Regulation 378/18** that was filed on May 8, 2018 came into force on July 1, 2019. This regulation made under the *Fire Protection and Prevention Act, 1997* (FPPA) requires all municipalities and fire departments in territories without municipal organization to complete a community risk assessment and use its community risk assessment to inform decisions about the provision of fire protection services.

This regulation will ensure municipalities, and fire departments in territories without municipal organization, make evidence-based decisions on the provision of fire protection services based on the unique needs and circumstances of each of their communities in accordance with 2.(1) of the FPPA.

Ontario Regulation 378/18 can be viewed online at [\*\*www.ontario.ca/laws\*\*](http://www.ontario.ca/laws)

While the regulation came into effect on July 1, 2019, municipalities and fire departments may have up to July 1, 2024 to complete their community risk assessment.

The OFMEM is currently developing a guideline to assist municipalities and fire departments in completing their risk assessments in accordance with the regulation. The guideline will be made available to the fire service through a subsequent Communiqué and posted on the OFMEM website.

Enquiries regarding the Ontario Regulation 378/18 may be directed to Office of the Fire Marshal and Emergency Management via email [\*\*askofmem@ontario.ca\*\*](mailto:askofmem@ontario.ca).

## CRA Guideline OFMEM



**[Download the CRA Guideline](#)** [1.2 MB]

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July, 2019

OFMEM Section: Public Safety Education at 1-800-565-1842

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#### Abstract

The Office of the Fire Marshal and Emergency Management (OFMEM) has developed this guideline to assist municipalities and fire departments in a territory without municipal organization, to conduct community risk assessments and use its community risk assessment to inform decisions about the provision of fire protection services, in accordance with *Ontario Regulation 378/18 (O.Reg. 378/18)*, and the *Fire Protection and Prevention Act 1997 (FPPA)*.

For further information or assistance contact the Public Safety Education Manager at 1-800-565-1842.

#### **This guideline provides:**

An outline of recommended best practices to conduct a community risk assessment in order to make informed decisions about the provision of fire protection services;

Descriptions of the nine mandatory profiles outlined in *O. Reg. 378/18* that must be addressed in the community risk assessment, including examples of where this data and information can be obtained;

Worksheets that can be used or modified to document and analyze data/information related to the nine mandatory profiles that must be addressed in the community risk assessment in accordance with *O. Reg. 378/18*, and,

Worksheets that can be used or modified to assist in assigning risk levels and identifying preferred treatment options.

#### **1.0 SCOPE**

This document has been prepared by the Office of the Fire Marshal and Emergency Management to assist municipalities and fire departments in territories without municipal organization to conduct community risk assessments to meet the requirements of Ontario Regulation 378/18.

#### **2.0 INTRODUCTION**

Community risk assessments allow fire departments to make informed decisions about the types and levels of fire protection services they will provide based on identified risks.

Risk is defined as a measure of the probability and consequence of an adverse effect to health, property, organization, environment, or community as a result of an event, activity or operation.

By identifying all fire and life safety risks in their community and prioritizing them based on the probability of them occurring and the impact they would have if they occurred, fire departments are able to determine which risks to address and how best to address them. Risk assessments allow fire departments to ensure their levels of service, programs and activities for public fire safety education, Fire Code inspections and enforcement, and emergency response directly address the identified risks and are most effective at preventing and mitigating them.

The *Fire Protection and Prevention Act, 1997 (FPPA)* mandates that every municipality in Ontario shall establish a program which must include public education with respect to fire safety and certain components of fire prevention and provide such other fire protection services as it determines may be necessary in accordance with its needs and circumstances. In the fire service, these elements are commonly referred to as the Three Lines of Defence:

- Public Fire Safety Education
- Fire Safety Standards and Enforcement
- Emergency Response

To meet these obligations, municipalities need to make informed decisions with respect to the types and levels of fire protection services they provide. This requires an understanding of the risks facing the community that can be identified through a community risk assessment. Once identified, the risks can be prioritized to assist in making informed decisions about risk treatment options and the provision of fire protection services.

*Ontario Regulation 378/18: Community Risk Assessments (O. Reg. 378/18)* requires that every municipality and every fire department in a territory without municipal organization complete a community risk assessment and use it to inform decisions on the provision of fire protection services. The Community Risk Assessment is an in-depth and comprehensive assessment to inform fire protection service levels and requires the identification, analysis, evaluation and prioritizing of risk, based on nine mandatory profiles.

The regulation outlines a standard set of information profiles that must be considered when conducting a community risk assessment. The information and data gathered to address each

of the profiles will assist in determining and prioritizing the risks to public safety in the community and determining the fire protection services to be provided by municipalities and fire departments in territories without municipal organization to address those risks.

The mandatory profiles identified in Schedule 1 of O. Reg. 378/18 were determined from examining various current industry models on risk assessment. Many of these models provide comprehensive coverage pertaining to identification of data and information relating to community risks. However, it should be noted that these risk assessment models may or may not include all the nine mandatory profiles as identified in Schedule 1 of O. Reg. 378/18. Municipalities and fire departments in territories without municipal organization may use other tools, models, or guidelines to conduct their community risk assessments provided that their final community risk assessment meets all the requirements outlined in O. Reg. 378/18., including consideration of each of the nine mandatory profiles identified in Schedule 1 of the regulation (see Appendix E).

The Guideline provides suggestions as to how to record and analyze the data/information using the sample worksheets that are provided in the Guideline. Municipalities and fire departments in territories without municipal organization have flexibility to include any additional information (e.g., maps, charts, diagrams) they deem appropriate to best assist them in analyzing their data and information to make informed decisions on fire protection services.

The *Emergency Management and Civil Protection Act* (EMCPA) requires every municipality to conduct an all-hazards risk assessment, which informs continuous improvement of emergency management programs and improves public safety. A completed Hazard Identification Risk Assessment (HIRA) may provide some of the information/data required to fulfil the needs of a Community Risk Assessment under O. Reg. 378/18, although there will be specific fire related information that is not contained in the HIRA that will be gathered as part of this process. The HIRA and the Community Risk Assessment are separate processes but should be viewed as complementary to one another.

**Note: For the purposes of this guideline, the terms “fire department” and “fire departments” will be considered to include every municipality and every fire department without municipal organization.**

### **3.0 CONDUCTING A COMMUNITY RISK ASSESSMENT**

#### **3.1 Identifying Risks – Mandatory Profiles**

The first step in conducting a community risk assessment is to identify the various fire and life safety risks in the community. This can be done by gathering data about the make-up of the community and the activities occurring there.



O. Reg. 378/18 requires fire departments to consider the following profiles when completing their community risk assessment to ensure the risk assessment best considers all potential risks in the community:

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

Fire departments need to gather and review data and information about each of these profiles to identify the fire and life safety risks that could impact the community.

Worksheets 1 to 9 in Appendix A of this guideline can be used to record and organize the data and information for each profile. The worksheets can be filled in electronically. Fire and emergency risks and issues/concerns can be noted in the appropriate columns of each worksheet as they are identified. These worksheets can be modified or adapted to suit local needs based on available data or information.

A description of each profile, including potential sources of data and information for each, is provided below.

### **3.1.1 Geographic Profile**

Geographic profile refers to the physical features of the community, including the nature and placement of features such as highways, waterways, railways, canyons, bridges, landforms, and wildland-urban interfaces.

Physical features of the community may present inherent risks that need to be taken into account when determining the type and level of fire protection services that should be provided by the fire department. Physical features may also impact emergency response access and response times.

Identifying any geographic features that might have implications with respect to risk or response allows fire departments to consider these issues when determining appropriate types and levels of fire protection services.

For example, a lake may have implications with respect to water and/or ice rescue services and the equipment and training that would be required to provide those services. The lake may also impact emergency response access and response times to certain areas within the community. Additionally, a lake may be a seasonal tourist attraction and the associated activities may present unique risks that could influence decisions on specific public fire safety education and Fire Code inspection and enforcement programs and activities.

#### Where to find/collect this information

Information related to the Geographic profile may be obtained from:

Local knowledge of the area and by using maps of the municipality's natural (i.e., lakes, rivers, etc.) and human-made (i.e., highways, bridges, railways, etc.) features, and

Local municipal departments (i.e., highways/roads, conservation authorities, etc.) who should have information about the location and uses of geographic and physical features of the community.

#### **3.1.2 Building Stock Profile**

Building Stock profile refers to the types, numbers, uses, and ages of the various buildings within the community.

Fire departments should consider the potential fire risks associated with different types/classifications or uses of buildings given their prevalence in the community and the presence of fire safety systems and equipment at the time of construction.

Older buildings typically do not contain the same fire safety and fire protection systems required in newer buildings. This may impact the fire risk in older buildings. Also, how buildings are used can influence the fire risks in each building. For example, industrial chemical storage facilities are likely to present higher fire risks than buildings containing commercial retail activities. The age and type of residential buildings (e.g., high-rise vs. single family dwelling vs. town/row houses) can influence the probability and consequence of fire in those buildings.

Past inspection practices and frequencies also can be a factor when considering risk associated with any particular building occupancy classification categories. For instance, a robust inspection program in higher risk occupancies can have a positive influence on mitigating some of the inherent risks associated with that particular type of building. Conversely, a lack of historical inspection data in relation to a particular occupancy classification category also should be considered when determining risk.

These building characteristics can have significant impact on the public fire safety education, Fire Code inspection and enforcement and emergency response activities the fire department may determine are necessary to address the risks.

Where to find/collect this information

O. Reg. 378/18 does not specify which source of this information has to be referenced to complete the risk assessment. Fire departments have the flexibility to choose which source they feel will provide the optimum level of detail they are most comfortable with as an accurate reflection of the building stock in their community. Consideration should be given to consistency in terms of data sources when conducting new risk assessments and annual reviews.

Information related to the Building Stock profile may be obtained from:

- Categorizing buildings in accordance with the Standard Incident Report (SIR) property classification system which corresponds with the Ontario Building Code (OBC) occupancy classification system. As the Ontario Fire Code (OFC) requires that buildings be classified in accordance with the OBC, this approach makes it easy to consider issues like the type of construction and fire safety equipment/features that should be present in the different classifications of buildings, based on their size, age, design, and use;
- Municipal building departments that have information regarding the age, number, types, uses, etc. of buildings in the municipality;
- *Municipal Property Assessment Corporation* (MPAC – [www.mpac.ca](http://www.mpac.ca)) data that assesses and classifies all properties within Ontario, and
- Fire department pre-plans that identify uses and potential risks within specific buildings or areas of the community.

### 3.1.3 Critical Infrastructure Profile

Critical Infrastructure profile refers to the facilities or services that contribute to the interconnected networks, services, and systems that meet vital human needs, sustain the economy, and protect public safety and security (i.e., electricity distribution, water distribution, telecommunications, hospitals, and airports).

Consideration of the presence, availability, capacity, and stability of infrastructure elements can help identify potential impacts that may result if any of these systems are compromised.

Understanding how infrastructure impacts things like emergency services dispatch, communications, fire department emergency operations, overall health care or transportation can assist in determining preferred treatment options to address specific risks.

#### Where to find/collect this information

Information related to the Critical Infrastructure profile may be obtained from:

Local municipal departments (i.e., public works, water and sanitation departments, etc.) and other local utility companies that have information about the location, uses, capacity, etc. of the critical infrastructure in the community, and

A completed Hazard Identification Risk Assessment.

#### **3.1.4 Demographic Profile**

Demographic profile refers to the composition of the community's population considering such factors as population size and dispersion, age, gender, cultural background, level of education, socio-economic make-up, and transient population.

Awareness of the characteristics of the population in the community assists the fire department to determine if specific segments of the population are at high-risk of fire. This awareness allows fire departments to best identify high-risk behaviours that need to be changed, as well as specific techniques to communicate with high-risk groups.

Fire protection services, including public fire safety education and Fire Code inspections and enforcement programs, should be tailored to high-risk groups so that fire safety programs are delivered in the most relevant and meaningful ways and can have the greatest impact. For example, delivering fire safety messages using communications techniques popular with specific high-risk segments of the population increases the likelihood the messages are received by those segments and therefore are most effective at reducing the fire risk.

#### Where to find/collect this information

Information related to the Demographic profile may be obtained from:

Local municipal departments that keep information regarding the demographic make-up of their populations, including trends and projections regarding how the demographics may change in the coming years. The amount of this type of information that is available from municipal departments may vary between municipalities, and Statistics Canada ([www.statscan.gc.ca](http://www.statscan.gc.ca)) census profiles of every community in Ontario, including demographic information.

#### **3.1.5 Hazard Profile**

Hazard profile refers to the hazards in the community, including natural hazards, hazards caused by humans, and technological hazards. This may include but not be limited to hazardous materials spills, floods, freezing rain/ice storms, forest fires, hurricanes, tornadoes, transportation emergencies (i.e. air, rail or road), snow storms, windstorms, extreme temperature, cyber-attacks, human health emergencies, and energy supply (i.e. pipelines, storage and terminal facilities, electricity, natural gas and oil facilities, etc.). Fire departments should consider all potential hazards that pose a significant risk to or may have a significant impact on the community, and to which fire departments may be expected to respond.

Where to find/collect this information

Information related to the Hazard profile may be obtained from:

Local municipal or government departments (i.e., public safety, police, emergency management, etc.) with information about the natural and technological hazards within the community and the risk they pose;

Local historical incident data related to emergency incidents, and a completed Hazard Identification Risk Assessment.

**3.1.6 Public Safety Response Profile**

Public Safety Response profile refers to the agencies and organizations in the community (i.e., police, EMS, rescue) that may respond to certain types of incidents.

The fire department should consider other public safety response agencies (i.e., police, EMS, rescue) that might be tasked with or able to assist in the response to emergencies or in mitigating the impact of emergencies. This will assist the fire department to prioritize community risks and to determine the level of fire protection services it provides. For example, the presence of a private fire and rescue service at a local industrial facility may influence decisions about the type and the level of fire protection services a municipal fire department may provide to that facility.

Where to find/collect this information

Information related to the Public Safety Response profile may be obtained from:

Local municipal departments (i.e., police, EMS, emergency management, etc.), and

Private companies or industrial facilities who may have information about the response capabilities of other entities within the community.

### 3.1.7 Community Services Profile

Community Services profile refers to community agencies, organizations or associations that can provide services that support the fire department in the delivery of public fire safety education, Fire Code inspections and enforcement, or emergency response.

Community service agencies may be able to provide services in-kind, financial support, provisions of venues for training, increased access to high-risk groups in the community, or temporary shelter for displaced residents following an incident.

#### Where to find/collect this information

Information related to the Community Services profile may be obtained from:

- General local knowledge;
- Local municipal departments (i.e., social services);
- Community service agencies (i.e., agencies providing English as a second language services, resettlement agencies, agencies working with older adults, the Canadian Red Cross, etc.) who have information about the various services provided by community organizations and their clients within the community.

### 3.1.8 Economic Profile

Economic profile refers to the economic sectors affecting the community that are critical to its financial sustainability.

When prioritizing risk in the community, the fire department should consider the impact of fire and other emergencies on the industrial or commercial sectors that provide significant economic production and jobs to the local economy. This will assist in determining the type and level of fire protection services provided in these sectors in the community.

For example, if a town has a large industrial or commercial occupancy that has a significant impact on the local economy, the fire department may consider increasing its public fire safety education and Fire Code inspection and enforcement activities to reduce the probability of a significant incident requiring a large-scale emergency response.

#### Where to find/collect this information

Information related to the Economic profile may be obtained from:

Local municipal departments (i.e., economic development, employment, and social services) that have information about the economic sectors that are critical to the community's economic well-being. This will help determine the economic impact (e.g., loss of business or jobs) if a fire occurs in a specific occupancy or area of the community.

### 3.1.9 Past Loss and Event History Profile

Past Loss and Event History profile refers to the community's past emergency response experience, including analyzing the following:

- a) The number and types of emergency responses, injuries, deaths, and dollar losses.
- b) A comparison of the community's fire loss statistics with provincial fire loss statistics.

Fire departments should evaluate previous response data to identify trends regarding the circumstances, behaviours, locations, and occupancy types of previous fires. This assists in determining the leading causes or behaviours resulting in fires, and high-risk locations and occupancies. Public fire safety education and Fire Code inspection and enforcement programs can then be designed to specifically target high-risk behaviours among various population groups and to focus prevention activities in high-risk neighbourhoods or locations. This targeted approach allows public fire safety education and Fire Code inspection and enforcement programs to directly address fire risks, thereby increasing their fire prevention effectiveness.

#### Where to find/collect this information

Information related to the Past Loss and Event History profile may be obtained from:

Standard Incident Reports completed by the fire department. These can be obtained through fire department records or by emailing the Office of the Fire Marshal and Emergency Management (OFMEM) at [OFMstatistics@ontario.ca](mailto:OFMstatistics@ontario.ca);

Trends and statistics about fire causes and fire and life safety issues across the province located on the [OFMEM's website](#), and

Information, available on request from the OFMEM, relating to fire losses in neighbouring communities.

For those communities where trends are not easily identifiable due to a lack of fire incidents, it may be helpful to look at trends across the province or in neighbouring municipalities that are similar in size and make-up.

It is suggested that a minimum of three (3) years' worth of data is analyzed to identify any potential patterns or trends and to avoid random events from unduly skewing the data.

## 4.0 PRIORITIZING RISKS

The mandatory profiles allow fire departments to identify the features and characteristics of their community that may impact fire and life safety risks. Once risks have been identified they should be prioritized. This section discusses how risks can be prioritized based on the probability of the risk happening and the consequence if the risk occurs. **Table 1: Probability**

**Levels and Table 2: Consequence Levels** can be used to help determine the probability and consequence of each risk identified on the worksheets. The probability and consequence of each risk can then be noted in the appropriate columns on the relevant worksheets in Appendix A.

As noted in the introduction, risk is defined as a measure of the probability and consequence of an adverse effect to health, property, organization, environment, or community as a result of an event, activity or operation.

#### **4.1 Probability**

The probability or likelihood of a fire or emergency within a community is often estimated based on the frequency of previous experiences. A review of past events involves considering relevant historical fire loss data, learning from the experiences of other communities, and consulting members of the community with extensive historical knowledge. Professional judgment based on experience should also be exercised in combination with historical information to estimate probability levels. The probability of an event can be categorized into five levels of likelihood:



Table 1: Probability Levels

Description	Specifics
Rare	<ul style="list-style-type: none"> <li>• may occur in exceptional circumstances</li> <li>• no incidents in the past 15 years</li> </ul>
Unlikely	<ul style="list-style-type: none"> <li>• could occur at some time, especially if circumstances change</li> <li>• 5 to 15 years since the last incident</li> </ul>
Possible	<ul style="list-style-type: none"> <li>• might occur under current circumstances</li> <li>• 1 incident in the past 5 years</li> </ul>
Likely	<ul style="list-style-type: none"> <li>• will probably occur at some time under current circumstances</li> <li>• multiple or recurring incidents in the past 5 years</li> </ul>
Almost Certain	<ul style="list-style-type: none"> <li>• expected to occur in most circumstances unless circumstances change</li> <li>• multiple or recurring incidents in the past year</li> </ul>

Assign a probability level to each identified risk or hazard on the relevant worksheets in Appendix A.

#### 4.2 Consequence

The consequence of a fire or emergency is the potential losses or negative outcomes associated with the event. The application of professional judgment and reviews of past occurrences are important methods used for determining consequence levels. Estimating the consequence level of an incident or event should involve an evaluation of four components:

**Life Safety:** Injuries or loss of life due to occupant and firefighter exposure to life threatening fire or other situations.

**Property Loss:** Monetary losses relating to private and public buildings, property content, irreplaceable assets, significant historic/symbolic landmarks and critical infrastructure.

**Economic Impact:** Monetary losses associated with property income, business closures, a downturn in tourism and/or tax assessment value, and employment layoffs.

**Environmental Impact:** Harm to human and non-human (i.e., wildlife, fish and vegetation) species of life and a general decline in quality of life within the community due to air/water/soil contamination as a result of the incident and response activities.

The consequence of an event can be categorized into five levels based on severity:



Description	Specifics
Insignificant	<ul style="list-style-type: none"> <li>• no life safety issue</li> <li>• limited valued or no property loss</li> <li>• no impact to local economy, and/or</li> <li>• no effect on general living conditions</li> </ul>
Minor	<ul style="list-style-type: none"> <li>• potential risk to life safety of occupants</li> <li>• minor property loss</li> <li>• minimal disruption to business activity, and/or</li> <li>• minimal impact on general living conditions</li> </ul>
Moderate	<ul style="list-style-type: none"> <li>• threat to life safety of occupants</li> <li>• moderate property loss</li> <li>• poses threat to small local businesses, and/or</li> <li>• could pose a threat to the quality of the environment</li> </ul>
Major	<ul style="list-style-type: none"> <li>• potential for a large loss of life</li> <li>• would result in significant property damage</li> <li>• significant threat to large businesses, local economy and tourism, and/or</li> <li>• impact to the environment would result in a short term, partial evacuation of local residents and businesses</li> </ul>
Catastrophic	<ul style="list-style-type: none"> <li>• significant loss of life</li> <li>• multiple property damage to a significant portion of the municipality</li> <li>• long-term disruption of businesses, local employment, and tourism, and/or</li> <li>• environmental damage that would result in long-term evacuation of local residents and businesses</li> </ul>

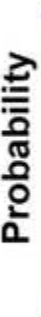

Assign a consequence level to each identified risk or hazard on the relevant worksheets in Appendix A.

## 5.0 ASSIGNING RISK LEVEL

Assigning a risk level assists fire departments in prioritizing risks, which helps to determine how to address or treat each risk. The **Risk Level Matrix** in this section can assist fire departments to determine risk levels based on the probability and consequence levels of each identified risk. Risks can be assigned as low risk, moderate risk or high risk. The risk levels for each risk can be noted in the **Assigned Risk Level** column on the relevant worksheets in Appendix A.

The matrix below can be used to determine the assigned risk level.<sup>[1]</sup> Plot the assigned probability and consequence levels on the relevant worksheets in Appendix A to assign a risk level for each identified risk.

**Risk Level Matrix**

<b>Probability</b> 	<b>ALMOST CERTAIN</b>	Moderate Risk	Moderate Risk	High Risk	High Risk	High Risk
	<b>LIKELY</b>	Moderate Risk	Moderate Risk	Moderate Risk	High Risk	High Risk
	<b>POSSIBLE</b>	Low Risk	Moderate Risk	Moderate Risk	Moderate Risk	High Risk
	<b>UNLIKELY</b>	Low Risk	Low Risk	Moderate Risk	Moderate Risk	Moderate Risk
	<b>RARE</b>	Low Risk	Low Risk	Low Risk	Moderate Risk	Moderate Risk
		<b>INSIGNIFICANT</b>	<b>MINOR</b>	<b>MODERATE</b>	<b>MAJOR</b>	<b>CATASTROPHIC</b>
		 <b>Consequence</b>				

## 6.0 RISK TREATMENT OPTIONS

Once risk levels have been assigned, fire departments can determine how best to treat each risk and the resources required to do so.

Options for treating risks include the following:

- Avoid the Risk
- Mitigate the Risk
- Accept the Risk
- Transfer the Risk

### 6.1 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 so that fires may be prevented and people react appropriately when fires do occur. Fire Code inspections and enforcement help to ensure that buildings are in compliance with the Ontario Fire Code.

## **6.2 Mitigate the Risk**

Mitigating the risk means implementing programs and initiatives to reduce the probability and/or consequence of a fire or emergency.

For example, a routine Fire Code inspection and enforcement program to ensure Fire Code compliance helps to reduce the probability and consequence of a fire.

A pre-planning program involving fire suppression crews allows the fire department to gain knowledge about specific buildings in the community and their contents, fuel load, fire protection systems, etc. This information can be provided to the fire inspection staff who can ensure the building is compliant with the Fire Code. Also, it can assist suppression crews to plan fire suppression operations should a fire occur in a building. These activities can reduce the probability and consequence of a fire.

## **6.3 Accept the Risk**

Accepting the risk means that after identifying and prioritizing a risk, the fire department determines that no specific programs or initiatives will be implemented to address this risk. In this treatment option, the fire department accepts that the potential risk might happen and will respond if it occurs.

For example, typically fire departments do not implement programs to prevent motor vehicle collisions. Yet it is generally accepted that collisions will happen and that the fire department will respond when they do. Similarly, environmental hazards (e.g., ice storms) and medical calls cannot be prevented by a fire department program or initiative, yet 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.

## **6.4 Transfer the Risk**

Transferring the risk means the fire department transfers the impact and/or management of the risk 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.

For example, a community may enter into a fire protection agreement with a neighbouring community with respect to any or all the three lines of defence.

## 7.0 SETTING THE TYPE AND LEVEL OF FIRE PROTECTION SERVICES

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

After considering these issues, the preferred treatment option (e.g., avoid the risk, mitigate the risk, accept the risk, or transfer the risk) can be noted in the **Preferred Treatment Option** column of worksheet 10 in Appendix A.

Fire departments should also ensure that operational policies and standard operating guidelines address the levels of service and activities required to address each risk. This includes setting goals and objectives, and determining resources, training, equipment, activities, and programs required across each of 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:

Implementation of public fire safety education, Fire Code inspections and enforcement, and emergency response activities that are appropriate to address 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.) that may be required to implement preferred treatment options.

Strategic partners with common interests, available resources, or skill sets that could assist in addressing risks using the applicable risk assessment profiles.

Establishing and Regulating By-laws, operational policies and standard operating guidelines that reflect the fire protection services to be provided to address the identified risks.

Establishment of goals and objectives, strategies, timelines, and evaluation for the proposed fire protection services to be provided.

Communication with municipal council and the public to outline the types and levels of fire protection services that will be provided.

## 8.0 REVIEW

O. Reg. 378/18 requires fire departments to complete a new community risk assessment at least every five years. The regulation also requires that fire departments review their

community risk assessment at least once every 12 months to ensure it continues to accurately reflect the community and its fire and emergency risks. The purpose of this review is to identify any changes in the mandatory profiles that may result in a change in risk level, or a change in the type or level of fire protection services the fire department determines necessary to address the risks. This review is intended to ensure that the fire protection services provided continue to be evidence-based and linked to the identified risks.

This review process may or may not involve a close examination of all the nine community profiles, depending on whether any changes related to the profiles have occurred since the completion of the risk assessment or the last review. For example, changing demographic profiles (e.g., an aging population or an increase in the number of immigrants) or changing geographic profiles (e.g., the planned construction of a new highway) may impact the risks identified in the community risk assessment and the fire department activities and resources required to address them. A review may or may not result in any changes to the assigned risk levels or fire protection services. However, a review can provide evidence-based justification for decisions that may impact the delivery of fire protection services.

Fire departments should maintain documentation that the reviews required by O. Reg. 378/18 have been conducted. This documentation should include:

- Any changes to any of the mandatory profiles;
- Any changes to assigned risk levels or fire protection services that occur as a result of the review, and
- Any other information the fire department deems appropriate to the review or any resultant changes to fire protection services.
- If no significant changes occur in the community within a 12-month period, and no changes are required to the profiles or fire protection services, then a review could simply consist of documentation to that effect.



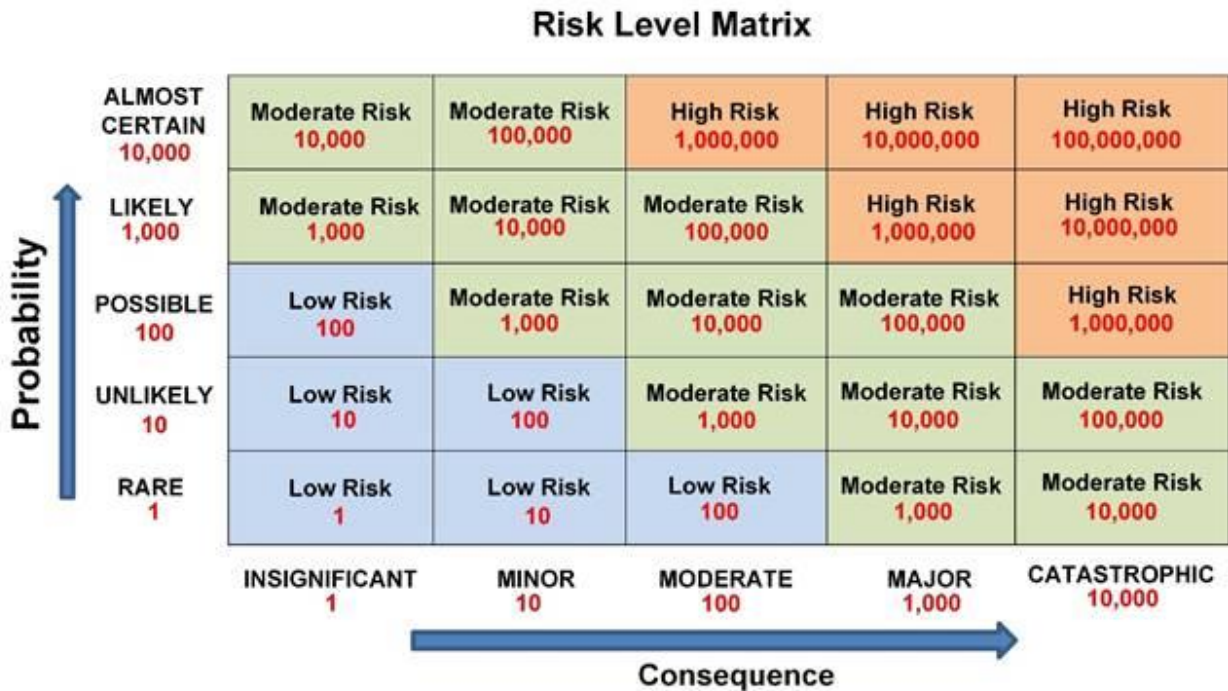
# Appendix B:

Determination of the Risk Levels



**APPENDIX B: DETERMINATION OF THE RISK LEVELS**

The risk levels in the Risk Level Matrix in FIGURE 1 were determined using the following methodology. The probability and consequence levels outlined in Table 1: Probability Level (page 13) and Table 2: Consequence Level (pages 14-15) have different definitions, but are given the same weighted numerical values<sup>[2]</sup> (see the numerical values in red below) to reflect the fact that **probability and consequence are equally important**. While it is human tendency to place more weight on consequence than probability, using the same weighted numerical values ensures that probability and consequence are given equal value. This approach is consistent with current risk management industry practices. The risk levels in the Risk Level Matrix were determined by multiplying the numeric values for probability and consequence.



<b>Low Risk:</b>	probability x consequence = 1; 10; or 100
<b>Moderate Risk:</b>	probability x consequence = 1,000; 10,000; or 100,000
<b>High Risk:</b>	probability x consequence = 1,000,000; 10,000,000; or 100,000,000





**Appendix C:**  
Ontario Regulation 378/18

## **APPENDIX C: ONTARIO REGULATION 378/ 18**

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### **ONTARIO REGULATION 378/18**

made under the

### **FIRE PROTECTION AND PREVENTION ACT, 1997**

### **COMMUNITY RISK ASSESSMENTS**

#### **Mandatory use**

1. Every municipality, and every fire department in a territory without municipal organization, must, complete and review a community risk assessment as provided by this Regulation; and use its community risk assessment to inform decisions about the provision of fire protection services.

#### **What it is**

2. (1) A community risk assessment is a process of identifying, analyzing, evaluating and prioritizing risks to public safety to inform decisions about the provision of fire protection services.

(2) A community risk assessment must include consideration of the mandatory profiles listed in Schedule 1.

(3) A community risk assessment must be in the form, if any, that the Fire Marshal provides or approves.

#### **When to complete (at least every five years)**

3. (1) The municipality or fire department must complete a community risk assessment no later than five years after the day its previous community risk assessment was completed.

(2) If a municipality, or a fire department in a territory without municipal organization, comes into existence, the municipality or fire department must complete a community risk assessment no later than two years after the day it comes into existence.

(3) A municipality that exists on July 1, 2019, or a fire department in a territory without municipal organization that exists on July 1, 2019, must complete a community risk assessment no later than July 1, 2024.

**(4) Subsection (3) and this subsection are revoked on July 1, 2025.**

#### **When to review (at least every year)**

4. (1) The municipality or fire department must complete a review of its community risk assessment no later than 12 months after, the day its community risk assessment was completed; and the day its previous review was completed.
- (2) The municipality or fire department must also review its community risk assessment whenever necessary.
- (3) The municipality or fire department must revise its community risk assessment if it is necessary to reflect, any significant changes in the mandatory profiles; any other significant matters arising from the review.
- (4) The municipality or fire department does not have to review its community risk assessment if it expects to complete a new community risk assessment on or before the day it would complete the review.

#### **Commencement**

5. This Regulation comes into force on the later of July 1, 2019 and the day it is filed.

#### **Schedule 1:**

##### **Mandatory Profiles**

Geographic profile: The physical features of the community, including the nature and placement of features such as highways, waterways, railways, canyons, bridges, landforms and wildland-urban interfaces.

Building stock profile: The types of buildings in the community, the uses of the buildings in the community, the number of buildings of each type, the number of buildings of each use and any building-related risks known to the fire department.

Critical infrastructure profile: The capabilities and limitations of critical infrastructure, including electricity distribution, water distribution, telecommunications, hospitals and airports.

Demographic profile: The composition of the community's population, respecting matters relevant to the community, such as population size and dispersion, age, gender, cultural background, level of education, socioeconomic make-up, and transient population.

Hazard profile: The hazards in the community, including natural hazards, hazards caused by humans, and technological hazards.

Public safety response profile: The types of incidents responded to by other entities in the community, and those entities' response capabilities.

Community services profile: The types of services provided by other entities in the community, and those entities' service capabilities.

Economic profile: The economic sectors affecting the community that are critical to its financial sustainability.

Past loss and event history profile: The community's past emergency response experience, including the following analysis:

1. The number and types of emergency responses, injuries, deaths and dollar losses.
2. Comparison of the community's fire loss statistics with provincial fire loss statistics.

Note: Each profile is to be interpreted as extending only to matters relevant to fire protection services.



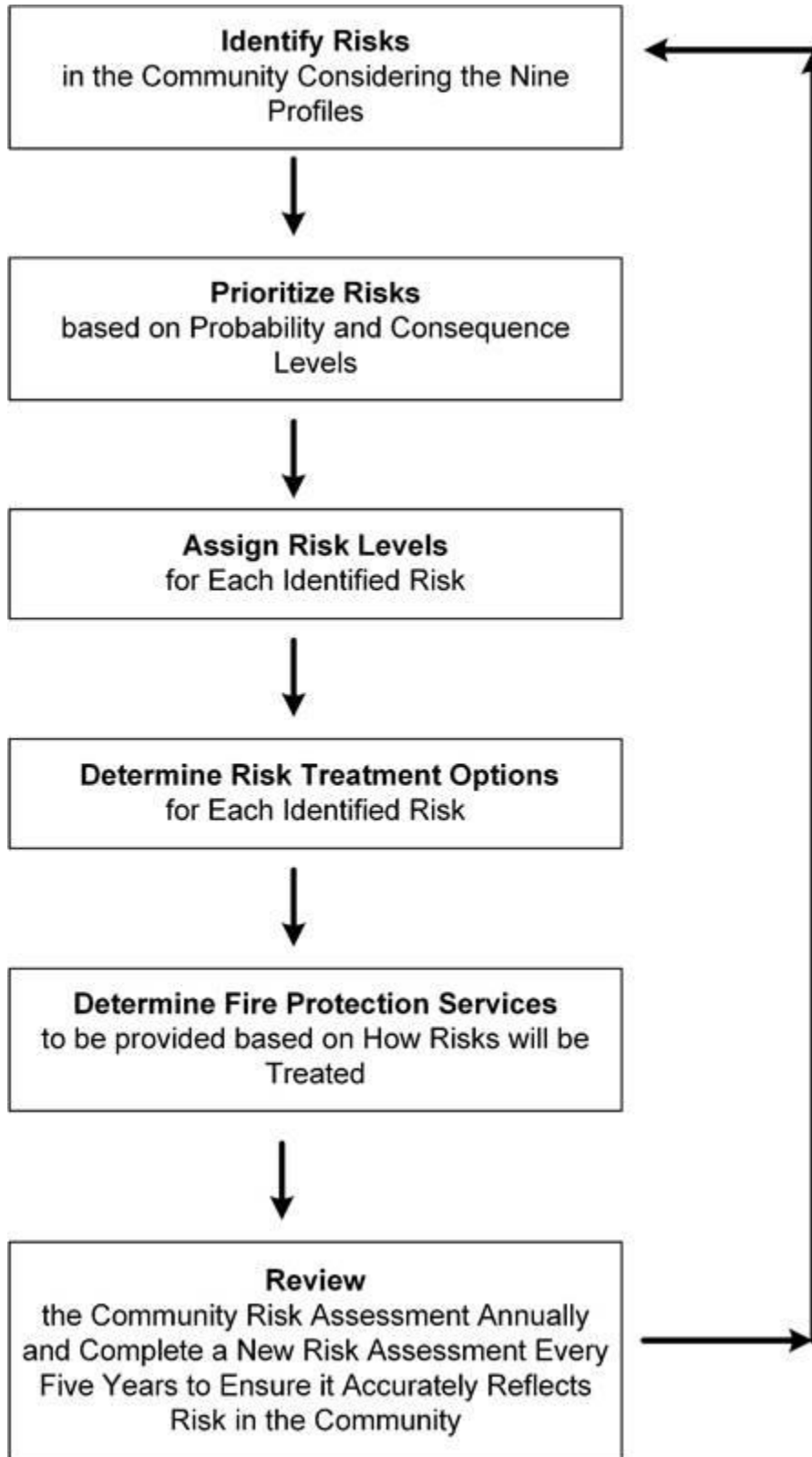
# Appendix D:

## Community Risk Assessment Flow Chart



**APPENDIX D: COMMUNITY RISK ASSESSMENT FLOW CHART**

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# **Appendix E:**

## References

## APPENDIX E: REFERENCES

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- DBP Management, **5 Ways to Manage Risk**, [dbpmanagement.com](http://dbpmanagement.com)
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