



Heritage  
PERTH

# PERTH

## COMMUNITY RISK ASSESSMENT

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Prepared by:

THE **LOOMEX** GROUP

# **Town of Perth Community Risk Assessment**

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## **Disclaimer**

The Loomex Group has made every effort to ensure that the information provided in this community risk assessment is accurate and complete as of the date the document was finalized.

In order to ensure this community risk assessment remains current, the Town of Perth should review the document annually. The town should also consider completing a new community risk assessment if its circumstances change significantly.

As per O. Reg. 378/18, each municipality must complete a new community risk assessment no later than five years after the day its previous community risk assessment was completed.

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## Executive Summary

### Purpose

In 2023, the Town of Perth contracted The Loomex Group to update its community risk assessment (“**CRA**”).

The CRA project had the following objectives:

- Fulfill the mandate of O. Reg. 378/18, which requires every municipality to complete a new CRA no later than five years after the day its previous CRA was completed.
- Identify and examine Perth’s public safety risks from a fire services perspective.
- Recommend strategies that Perth and Perth Fire Services can use to mitigate the town’s public safety risks.

### Process

The Loomex Group developed this CRA by reviewing the nine community profiles mandated by O. Reg. 378/18. This process followed the instructions given in the worksheets created by the Ontario Fire Marshal (“**OFM**”) as part of OFM-TG-02-2019.

The Loomex Group also conducted site visits and met with stakeholders from Perth. The visits and consultations provided first-hand insights into Perth’s current and potential public safety risks.

After completing its reviews and stakeholder engagement, The Loomex Group used a risk assessment tool to calculate the risk score of each hazard it identified in Perth. The Loomex Group then evaluated the administrative and operational concerns associated with each threat.

### Findings

This CRA identifies and examines ten public safety risks in Perth that are real and measurable threats.

In addition to the ten risks, this CRA provides information about other concerns in Perth that could not be included in a risk level matrix due to a lack of definite statistics. Those concerns are discussed throughout this document (as applicable). It is important for the Municipal Council of Perth (“**Council**”) and Perth Fire Services to familiarize themselves with all concerns noted in this CRA, as they include possible threats and issues that may intensify the danger of the town’s identified public safety risks.

Figure 1 illustrates the public safety risks identified in Perth, ranked in order of their risk levels and total risk scores.



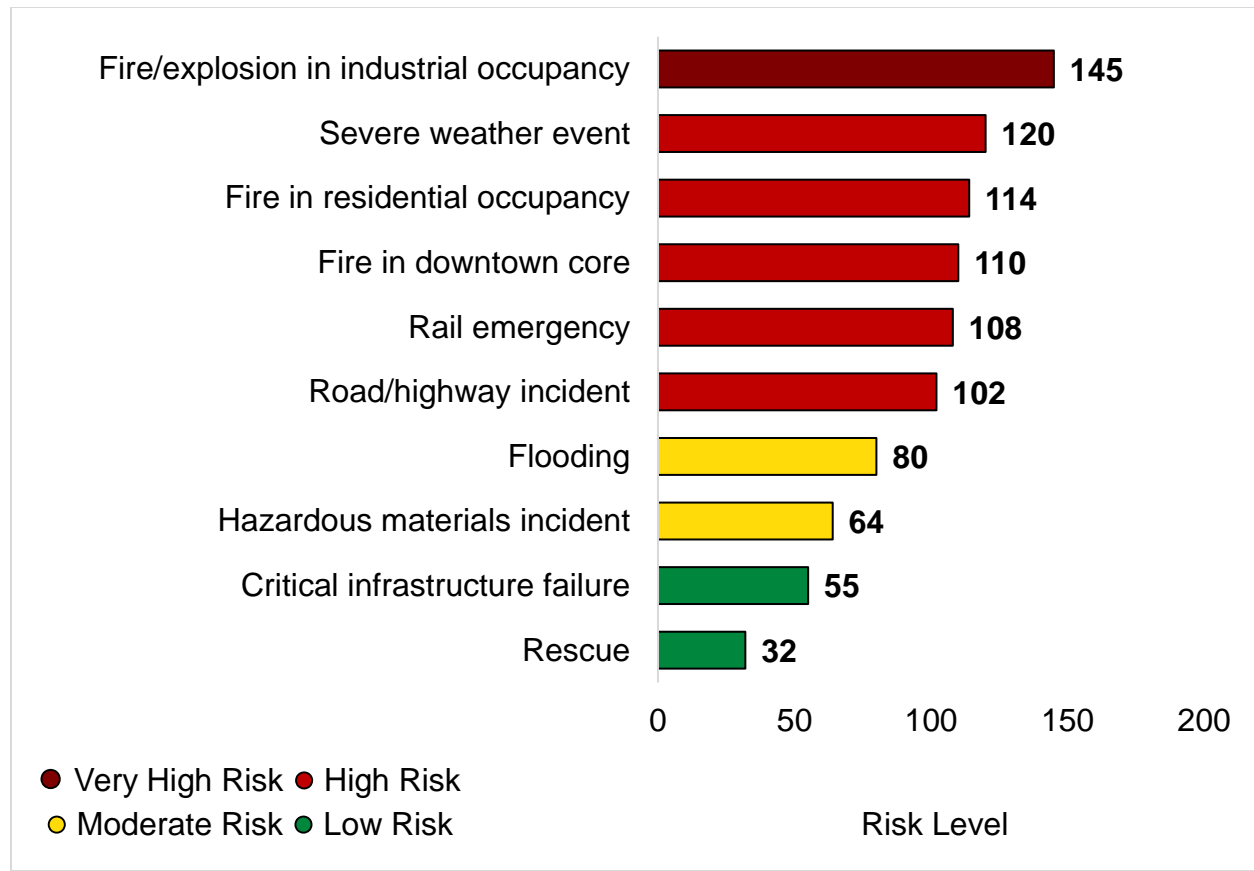


Figure 1. Public safety risks identified in Perth.

### Recommendations

The final step of this CRA's development was the creation of a risk treatment plan ("RTP") for each public safety risk identified in Perth.

The Loomex Group based the RTPs on the three lines of defence model endorsed by the OFM. The model recommends using proactive fire prevention and protection initiatives to help reduce the need for fire suppression services. The Loomex Group believes that following the three lines of defence is the best way to protect communities from fires and other life safety threats.

Going forward, Council and Perth Fire Services should review the RTPs in this CRA and discuss implementing them into their operations.

## 1.0 Introduction

### 1.1 Community Risk Assessments: Context

A CRA is a document that identifies and evaluates fire and life safety risks.

Risks are defined as events that can harm any one or more of the following:

- communities
- organizations
- human health
- properties
- the environment

All municipalities must plan ways to manage and mitigate the risks identified in their CRAs. Failing to do so could lead to damaged property, tarnished reputations, lost lives, and other consequences. To help municipalities avoid potential consequences, CRAs include RTPs that outline the actions, strategies, resources, and timelines fire departments will need to implement effective risk mitigation measures.

As a best practice, a fire department should develop strategies to address all risks identified in its CRA, starting with the risks most likely to occur.

### 1.2 Approach and Methodology

#### 1.2.1 Guiding Principle

The Loomex Group used the OFM's three lines of defence as its guiding principle throughout this project.

The three lines of defence are as follows:

1. **Public education and prevention:** To address this line of defence, fire departments must develop programs that provide community members with information that explains which steps they should take to protect their life safety.
2. **Fire safety standards and code enforcement:** To address this line of defence, fire departments must develop programs they can use to verify that all buildings in the community adhere to the Ontario Fire Code ("**OFC**") and maintain the applicable life safety systems.
3. **Emergency response:** To address this line of defence, fire departments must have well-trained and equipped firefighters who can prevent injury or loss of life and stop the spread of fires. Emergency response is the failsafe when either fire prevention or code enforcement programs have failed.

The three lines of defence recommend a proactive approach to community fire safety. By focusing on fire prevention and public education programs, fire departments can help reduce the need for fire suppression services.

The Honourable John B. Webber first outlined the three lines of defence in the Report of the Public Inquiry into Fire Safety in Highrise Buildings (published in 1983). The OFM has since endorsed the model, including it as a vital part of OFM TG-02-2019 and other documents. The concept of this model also aligns with the requirements of the Fire Prevention and Protection Act (“**FPPA**”).

### **1.2.2 Data Collection Process**

The Loomex Group gathered information for this CRA by reviewing documents, conducting site visits, and holding engagement sessions.

Each form of data collection provided valuable insights into Perth’s operations and demographics, as well as the community’s current and anticipated fire protection needs.

### **1.2.3 Document Development Process**

The Loomex Group developed this CRA in accordance with the instructions of O. Reg. 378/18 and OFM-TG-02-2019.

As per O. Reg. 378/18, a CRA must review the following nine community profiles:

1. Geographic
2. Building Stock
3. Critical Infrastructure
4. Demographic
5. Hazard
6. Public Safety Response Entities
7. Community Services
8. Economic
9. Past Loss and Event History

The Loomex Group completed the nine community profiles by following the instructions in the worksheets created by the OFM as part of OFM-TG-02-2019. This CRA document contains the results of each community profile review.

This CRA also incorporates the insights that Fire Chief Trevor Choffe provided during the stakeholder engagement portion of the project.

### 1.2.4 Likelihood Levels, Consequence Levels, and Risk Levels

After identifying the public safety risks in Perth, The Loomex Group determined each threat’s likelihood and consequence levels using criteria provided by the OFM (as defined below).

#### Likelihood Levels

The OFM states that a fire department should use professional judgment along with historical information about past incidents in the community to estimate how likely it is for a given emergency to occur.

Table 1 shows how the OFM classifies risk likelihood levels.

Table 1. OFM risk likelihood levels.

Likelihood Level	Specifics
Rare	<ul style="list-style-type: none"> <li>An incident may occur in exceptional circumstances.</li> <li>No incidents have occurred in the past 15 years.</li> </ul>
Unlikely	<ul style="list-style-type: none"> <li>An incident could occur at some time if circumstances significantly change.</li> <li>It has been five to 15 years since the last incident.</li> </ul>
Possible	<ul style="list-style-type: none"> <li>An incident might occur under current circumstances.</li> <li>There has been one incident in the past five years.</li> </ul>
Likely	<ul style="list-style-type: none"> <li>An incident will probably occur at some time under current circumstances.</li> <li>There have been multiple or recurring incidents in the past five years.</li> </ul>
Almost certain	<ul style="list-style-type: none"> <li>An incident is expected to occur in most situations unless circumstances change.</li> <li>There have been multiple or recurring incidents in the past year.</li> </ul>

#### Consequence Levels

The OFM defines the consequence of a fire or other emergency as the potential losses or negative outcomes that result from the incident. When estimating consequence levels, fire departments should consider the potential impacts on lives, property, the local economy, and the environment.

Table 2 shows how the OFM classifies risk consequence levels.

Table 2. OFM risk consequence levels.

Consequence Level	Specifics
Insignificant	<ul style="list-style-type: none"> <li>• No life safety issue.</li> <li>• Limited value or no property loss.</li> <li>• No impact on the local economy.</li> <li>• No effect on general living conditions.</li> </ul>
Minor	<ul style="list-style-type: none"> <li>• Potential risk to the life safety of residents.</li> <li>• Minor property loss.</li> <li>• Minimal disruption to business activity.</li> <li>• Minimal impact on general living conditions.</li> </ul>
Moderate	<ul style="list-style-type: none"> <li>• There is a real threat to the life and safety of residents.</li> <li>• Moderate property loss.</li> <li>• Poses a threat to small local businesses.</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 massive loss of life.</li> <li>• Significant property damage.</li> <li>• Significant threat to large businesses, local economy, and tourism.</li> <li>• Environmental impact resulting in a short-term, partial evacuation of residents and businesses.</li> </ul>
Catastrophic	<ul style="list-style-type: none"> <li>• Significant loss of life.</li> <li>• Property damage to a significant portion of the community.</li> <li>• Long-term disruption of businesses, local employment, and tourism.</li> <li>• Environmental damage resulting in the long-term evacuation of residents and businesses.</li> </ul>

### Risk Level Matrix

After risk likelihood and consequence levels are identified, they are combined in order to calculate total risk levels.

Table 3 shows the risk level matrix The Loomex Group used to determine the overall level of community risk in Perth.

Table 3. Risk level matrix used to combine risk likelihood and consequence levels.

	Insignificant Consequence	Minor Consequence	Moderate Consequence	Major Consequence	Catastrophic Consequence
Almost Certain	<b>Moderate risk</b>	<b>Moderate risk</b>	<b>High risk</b>	<b>High risk</b>	<b>High risk</b>
Likely	<b>Moderate risk</b>	<b>Moderate risk</b>	<b>Moderate risk</b>	<b>High risk</b>	<b>High risk</b>
Possible	<b>Low risk</b>	<b>Moderate risk</b>	<b>Moderate risk</b>	<b>Moderate risk</b>	<b>High risk</b>
Unlikely	<b>Low risk</b>	<b>Low risk</b>	<b>Moderate risk</b>	<b>Moderate risk</b>	<b>Moderate risk</b>
Rare	<b>Low risk</b>	<b>Low risk</b>	<b>Low risk</b>	<b>Moderate risk</b>	<b>Moderate risk</b>



## 2.0 Overview of Community, Perth Fire Services, and Bylaws

### 2.1 Overview of the Perth Community

According to Perth's 2019 Community Profile:

The Town of Perth, Ontario is a community of 6,489 residents sitting along the Tay River in beautiful Eastern Ontario less than an hour from the Nation's Capital. With a diverse economic sector, stable post-secondary presence, and growing tourism economy, Perth is one of Ontario's most attractive and well-known towns. Perth's collection of historic limestone buildings and its focus on maintaining the heritage character of the community attracts visitors and an increasing number of residents from Ottawa, Kingston, Toronto and many areas in between. Offering the amenities of a community many times its actual size, Perth is a lively and exciting place in Ontario's economically growing Eastern Regions.<sup>1</sup>

According to the 2021 Statistics Canada census, Perth has a population of 6,489.

### 2.2 Overview of Perth Fire Services

Perth Fire Services provides fire suppression, code enforcement, and public education services for the residents, businesses, and visitors of Perth.

Perth Fire Services has one fire station (located at 1881 Rogers Road) and consists of 33 personnel.

### 2.3 Overview of Bylaws and Agreements in Perth

#### 2.3.1 Establishing and Regulating Bylaw

##### Overview

An establishing and regulating bylaw ("**E&R bylaw**") specifies which services the local fire department must deliver. The E&R bylaw also sets the level of service the local firefighters must provide.

##### Establishing and Regulating Bylaw for Perth

The current E&R bylaw for Perth is Bylaw 4610-2.

According to Bylaw 4610-2, Perth Fire Services must provide the following core services:

- structural firefighting

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<sup>1</sup> <https://www.perth.ca/en/do-business/resources/2019-Perth-Community-Profile.pdf>

- vehicle firefighting
- grass, brush, and forestry firefighting
- mutual aid assistance
- specialized services (at the awareness level)
- motor vehicle accident response services, including extrication
- shore-based water and ice rescues
- public assistance
- ambulance assistance
- police assistance
- community emergency plan participation
- Fire Marshal assistance (as required)
- fire prevention and public education programs
- fire investigations

### **2.3.2 Mutual Aid Agreements**

#### **Overview**

OFM Public Fire Safety Guideline 04-05-12: Mutual Aid states that a mutual aid plan allows a participating fire department to request assistance from a neighbouring fire department that is also authorized to participate in a plan approved by the Fire Marshal.

A mutual aid plan specifies that municipalities providing service to the designated areas agree to assist each other in the event of an emergency. Section 7 of the FPPA states that the Fire Marshal may appoint fire coordinators to “establish and maintain a mutual aid plan under which the fire departments that serve the designated area agree to assist each other in the event of an emergency.”

#### **Mutual Aid in Perth**

Perth Fire Services currently participates in the Lanark County Mutual Aid System and the Province of Ontario Mutual Aid Plan. As a participant in these plans, Perth Fire Services receives and provides resources as applicable.

### **2.3.3 Automatic Aid Programs and Fire Protection Service Agreements**

#### **Overview**

OFM Public Fire Safety Guideline 04-04-12: Automatic Aid states that automatic aid agreements are considered in municipal areas where a fire department outside of a

municipality is closer than the nearest fire department within the municipality.

An automatic aid agreement allows the closest fire department to respond to an incident regardless of municipal boundaries. The agreements aim to reduce the time it takes for firefighters to arrive and extinguish a fire, which helps minimize property loss and maximize the protection of residents.

OFM Public Fire Safety Guideline 04-09-12: Fire Protection Agreements defines fire protection agreements as contracts between participating municipalities that address the specifics of providing or receiving fire services at a cost.

A municipality may enter into a fire protection agreement if it does not have an existing fire department or the means to establish one. A municipality may also enter into a fire protection agreement to have multiple departments operating and managing a fire department jointly.

### **Automatic Aid and Fire Protection Agreements in Perth**

Perth Fire Services currently has the following agreements in place:

#### **Reciprocal Agreement with Drummond/North Elmsley Tay Valley Fire Rescue**

As per this agreement, Drummond/North Elmsley Tay Valley Fire Rescue uses Perth's fire hydrants as a water supply for its tanker shuttle program. In exchange, Perth Fire Services fills its air cylinders at the Drummond/North Elmsley Tay Valley Fire Station located on Sherbrooke Street.

#### **Smart Works Agreement with Leeds, Grenville and Lanark District Health Unit**

As per this agreement, Perth Fire Services keeps a stock of naloxone to treat opioid overdoses. The arrangement aligns with the recommendations of the Ministry of Health and Long-Term Care.

#### **Automatic Aid Rescue Service Agreement with Lanark County**

As per this agreement, Lanark County provides rescue services in Perth.

## 3.0 Geographic Profile

### 3.1 Context of a Geographic Profile

As per OFM-TG-02-2019, a geographic profile examines a community's physical features, including the nature and placement of the following:

- highways
- waterways
- railways
- canyons
- bridges
- landforms
- wildland-urban interfaces

A CRA reviews these features because they may impact how quickly emergency responders can arrive at an incident or access an emergency site. When a fire department is aware of potential impacts on its services, it can plan its response procedures accordingly.

### 3.2 Geography of the Town of Perth

#### Location

Perth is located on the Tay River in Eastern Ontario. The town is 80 kilometres southwest of Ottawa and 75 kilometres north of Kingston. On average, Perth is a two-and-a-half-hour drive to Toronto.

As a result of its location, Perth has easy access to highways 401, 416, and 417.

#### Size

Perth is 12.25 square kilometres in area, with a population density of 529.8 persons per square kilometre.

#### Lakes, Rivers, and Other Bodies of Water

The Tay River runs through Perth, with two channels located in the downtown area.

#### Trails and Forested Areas

There are several forested areas located on the outskirts of Perth. There are also several small trails located within the town.

## Bridges

There are several bridges in Perth, including bridges located on Gore Street West and Craig Street.

## Rail Lines

Rail lines operated by CPKC run through the centre of Perth from east to west. Due to the presence of level crossings, Perth Fire Services may not be able to access the north portion of the town in a timely manner.

### 3.3 Geographic Profile Summary

Table 4 lists Perth’s main geographic features. The table indicates if the features impact Perth Fire Services’ training and equipment, response and travel times, station locations, and response protocol.

Table 4. Geographic features in Perth.

Geographic Feature	Training & Equipment Impact	Response & Travel Time Impact	Fire Station Location Impact	Response Protocol Impact
Highway 7	✓	✓	✓	✓
County roads	✓	✓	✓	✓
Municipal roads		✓	✓	✓
Bridges				✓
Downtown core	✓			✓
Waterways and ponds	✓			✓
Trails	✓	✓		✓
CPKC railway	✓	✓	✓	✓

### 3.4 Risks Identified by the Geographic Profile

Table 5 summarizes the risks identified by the geographic profile for Perth.

Table 5. Geographic profile risk summary.

<b>Risk</b>	<b>Likelihood</b>	<b>Consequence</b>	<b>Risk Level</b>
Road/highway incident	Almost certain	Moderate	<b>High</b>
Flooding	Likely	Moderate	<b>Moderate</b>
Rail incident	Possible	Major	<b>Moderate</b>

For more information about the risks identified by this profile, refer to the following sections of this CRA:

- Section 12: This section contains the risk level matrix used to calculate the overall likelihood levels and risk scores for the indicated risks.
- Section 13: This section contains the RTPs developed for the indicated risks.



## 4.0 Building Stock Profile

### 4.1 Context of a Building Stock Profile

As per OFM-TG-02-2019, a building stock profile examines the types, numbers, ages, and uses of the buildings in a community. For reference purposes, the profile categorizes buildings according to the major occupancy classifications defined in the Ontario Building Code (“**OBC**”).

A CRA includes a building stock profile because fire departments must know the different types, classifications, and uses of buildings in the community. Each kind of building has different safety concerns, such as:

- Older buildings often lack the fire and life safety systems included in newer buildings.
- Industrial chemical storage facilities are likely at a higher fire risk than commercial retail occupancies.
- The configuration and age of a residential occupancy can influence the probability and consequence of a fire. For example, single-family dwellings present different risks than townhouses or row houses.

Due to considerations like these, it is important to know which types of buildings are prevalent in the community, as well as where they are located.

By reviewing the information in a building stock profile, a fire department can develop initiatives to address public safety risks such as fires, explosions, and structural failures.

### 4.2 Ontario Fire Marshal Directive 2022-001

On February 25, 2022, the OFM issued Directive 2022-001. The directive is in response to facts regarding the use of truss and lightweight construction systems (“**LWC**”).

According to the OFM, LWC may experience premature failure and rapid collapse under certain fire conditions. Because of those risks, a fire department needs to know which buildings in its community have LWC. That information is essential for delivering effective fire suppression services and protecting the safety of responding fire crews.

Directive 2022-001 requires a CRA to indicate how many local buildings have LWC. (If a municipality does not have a list that indicates which local buildings use LWC, it should strive to compile those records.) Overall, the intent of Directive 2022-001 is to provide firefighters with information that they can use to complete the pre-planning process and deliver suppression services safely and effectively.

See Appendix D for a copy of Directive 2022-001.

## LWC Occupancies in Perth

As of this CRA, Perth does not have records about the LWC used in its building stock.

Going forward, Perth should start tracking its LWC data for inclusion in future versions of the town's CRA.

### 4.3 Building Stock Town of Perth

#### 4.3.1 Building Stock Overview

Table 6 lists the building stock in Perth (based on information provided by Perth Fire Services, provincial maps, and the 2016 Statistics Canada census).

Table 6. List of building stock in Perth.

OBC Classification	Type of Occupancy	# of Buildings
Group A	Assembly occupancy	85
Group B	Care and treatment occupancy	8
Group C	Residential occupancy	2,377
Groups D & E	Mercantile/commercial occupancy	171
Group F	Industrial occupancy	64
Other/non-occupancies	N/A	8

#### 4.3.2 Building Stock Summary

Tables 6 to 11 summarize the building stock in Perth. The tables identify various fire and life safety issues, concerns, and observations based on an assessment of the following factors:

- building use
- building density
- building height and square footage
- building location
- the building's historical or cultural significance
- the building's economic impact
- the use of LWC

Table 7. Group A occupancies in Perth.

Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Restaurant	51	No data.	<ul style="list-style-type: none"> <li>• Patrons may lack awareness of secondary exits.</li> <li>• Staff may lack awareness of emergency procedures and fire safety plans.</li> <li>• On-site equipment requires servicing; the current status of this servicing is unknown.</li> <li>• It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> <li>• Life safety systems may not meet compliance requirements.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Church	9	No data.	<ul style="list-style-type: none"> <li>• Some buildings have been retrofitted.</li> <li>• It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> <li>• Large occupant loads are possible.</li> <li>• Some buildings have outstanding orders.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
School	8	No data.	<ul style="list-style-type: none"> <li>• It is assumed that most buildings comply with OBC and OFC regulations.</li> <li>• Time and resources are needed to verify that fire drills are completed annually.</li> <li>• Applicable staff must complete the required training.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>

Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Childcare facility	4	No data.	<ul style="list-style-type: none"> <li>• One childcare facility in Perth is located inside a school.</li> <li>• Three childcare facilities in Perth are not inspected on a regular basis. Unidentified risks may exist at those sites.</li> <li>• Staff may lack awareness of emergency procedures and fire safety plans.</li> <li>• Routine building inspections must be completed as per code compliance regulations.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Community hall	3	No data.	<ul style="list-style-type: none"> <li>• Patrons may lack awareness of secondary exits.</li> <li>• Staff may lack awareness of emergency procedures and fire safety plans.</li> <li>• It may take time and resources to verify that the buildings and all on-site equipment (such as commercial cooking equipment) comply with OFC and OBC regulations.</li> <li>• Routine building inspections must be completed as per code compliance regulations.</li> <li>• Some public functions may serve alcohol.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>

Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Arena/pool facility	2	No data.	<ul style="list-style-type: none"> <li>• Large occupant loads are possible.</li> <li>• The buildings are large.</li> <li>• Patrons may lack awareness of secondary exits.</li> <li>• Staff may lack awareness of emergency procedures and fire safety plans.</li> <li>• Routine building inspections must be completed as per code compliance regulations.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Theatre	2	No data.	<ul style="list-style-type: none"> <li>• Large occupant loads are possible.</li> <li>• It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Museum	2	No data.	<ul style="list-style-type: none"> <li>• Facilities have not been inspected; unidentified risks may exist at the facilities.</li> </ul>	Unlikely	Minor	<b>Low</b>
Service club	1	No data.	<ul style="list-style-type: none"> <li>• Renters may lack awareness of emergency procedures.</li> <li>• It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> <li>• Large occupant loads are possible.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Library	1	No data.	<ul style="list-style-type: none"> <li>• There is a large fire load on site.</li> <li>• There are many combustible materials on site.</li> <li>• Patrons may lack awareness of secondary exits.</li> <li>• Staff may lack awareness of emergency procedures and fire safety plans.</li> <li>• Routine building inspections must be completed as per code compliance regulations.</li> </ul>	Unlikely	Minor	<b>Low</b>

Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Funeral home	1	No data.	<ul style="list-style-type: none"> <li>Large occupant loads are possible.</li> <li>It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> </ul>	Unlikely	Minor	Low
County court house	1	No data.	<ul style="list-style-type: none"> <li>Large occupant loads are possible.</li> <li>It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> </ul>	Unlikely	Minor	Low

Table 8. Group B occupancies in Perth.

Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Group home	4	No data.	<ul style="list-style-type: none"> <li>These buildings are vulnerable occupancies.</li> <li>Annual inspections and fire drills must be completed as per code compliance regulations.</li> <li>Staff may need help evacuating building occupants.</li> <li>Flammable and combustible materials may be on site.</li> </ul>	Possible	Moderate	Moderate
Police station or county courthouse	2	No data.	<ul style="list-style-type: none"> <li>Staff may need help evacuating individuals in detention or lock-up areas.</li> <li>It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> <li>Ammunition may be on site.</li> </ul>	Unlikely	Minor	Low



Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Nursing home	1	No data.	<ul style="list-style-type: none"> <li>This building is a vulnerable occupancy.</li> <li>Annual inspections and fire drills must be completed as per code compliance regulations.</li> <li>Residents may have mobility issues.</li> <li>Staff may need help evacuating building occupants.</li> <li>Flammable and combustible materials may be on site.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Hospital	1	No data.	<ul style="list-style-type: none"> <li>This building is a vulnerable occupancy.</li> <li>Annual inspections and fire drills must be completed as per code compliance regulations.</li> <li>Staff may need help evacuating building occupants.</li> <li>Due to the nature of the building, evacuations may be challenging.</li> <li>Flammable and combustible materials may be on site.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>

Table 9. Group C occupancies in Perth.

Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Single-family dwelling	1,698	No data.	<ul style="list-style-type: none"> <li>Homes constructed before 1975 predate the OBC.</li> <li>As of 2020, new subdivisions were under construction.</li> <li>No LWC documentation is available.</li> </ul>	Likely	Moderate	<b>Moderate</b>

Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Multi-unit residential	374	No data.	<ul style="list-style-type: none"> <li>Some of these buildings are high.</li> <li>High-density living configurations are possible.</li> <li>More inspections must be completed as per code compliance regulations.</li> <li>New three-storey buildings use new materials.</li> <li>No LWC documentation is available.</li> </ul>	Likely	Moderate	<b>Moderate</b>
Condominium units	219	No data.	<ul style="list-style-type: none"> <li>Some of these buildings are high.</li> <li>High-density living configurations are possible.</li> <li>Inspections must be completed as per code compliance regulations.</li> <li>No LWC documentation is available.</li> </ul>	Possible	Moderate	<b>Moderate</b>
Mixed occupancies with residence	83	No data.	<ul style="list-style-type: none"> <li>Buildings constructed before 1975 predate the OBC. Many older buildings are located in the downtown core.</li> <li>More inspections must be completed as per code compliance regulations.</li> <li>All buildings must comply with OBC and OFC regulations.</li> <li>Life safety systems may be improperly maintained.</li> <li>No LWC documentation is available.</li> </ul>	Likely	Moderate	<b>Moderate</b>
Other	3	No data.	<ul style="list-style-type: none"> <li>Buildings have not been inspected; unidentified risks may exist at the buildings.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>

Table 10. Group D and E occupancies in Perth.

Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Retail business	111	No data.	<ul style="list-style-type: none"> <li>• There may be issues with fire separations.</li> <li>• More inspections must be completed as per code compliance regulations, as well as routine inspections.</li> <li>• Combustible materials may be on site.</li> <li>• Buildings may contain mixed products.</li> <li>• Patrons may lack awareness of secondary exits.</li> </ul>	Possible	Moderate	<b>Moderate</b>
Office building	21	No data.	<ul style="list-style-type: none"> <li>• Housekeeping procedures are required to deal with combustible materials on site.</li> <li>• It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> <li>• Large occupant loads are possible.</li> <li>• Routine inspections must be completed as per code compliance regulations.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Medical	10	No data.	<ul style="list-style-type: none"> <li>• Buildings have not been inspected; unidentified risks may exist at the buildings.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Vehicle repair shop	7	No data.	<ul style="list-style-type: none"> <li>• There are many hazards associated with this type of occupancy.</li> <li>• Fuel load, unknown commodities, and hazardous materials may be on site.</li> <li>• It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>

Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Retail service station	6	No data.	<ul style="list-style-type: none"> <li>• Combustible fuels may be on site.</li> <li>• Applicable staff must complete training related to fires and fuel spills.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Hotel/motel	6	No data.	<ul style="list-style-type: none"> <li>• Large occupant loads are possible.</li> <li>• It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Car dealership	5	No data.	<ul style="list-style-type: none"> <li>• There are many hazards associated with this type of occupancy.</li> <li>• It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Retail lumber yard	3	No data.	<ul style="list-style-type: none"> <li>• There are many hazards associated with this type of occupancy.</li> <li>• It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>
Shopping centres	2	No data.	<ul style="list-style-type: none"> <li>• Large occupant loads are possible.</li> <li>• Various fire loads may be on site.</li> <li>• The occupancies' type of construction may cause hazards.</li> <li>• As of this CRA, Perth Fire Services has not completed recent inspections of these occupancies.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>

Table 11. Group F occupancies in Perth.

Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Industrial properties	40	No data.	<ul style="list-style-type: none"> <li>• Hazardous materials may be on site.</li> <li>• Combustible materials may be on site.</li> <li>• Some buildings are large.</li> <li>• Buildings may have a high fire load.</li> <li>• There may be a high number of people in buildings.</li> <li>• Inspections are required to determine risks.</li> <li>• Occupancies may be changed without Perth Fire Services' knowledge.</li> </ul>	Likely	Moderate	<b>Moderate</b>
Fuel facilities	16	No data.	<ul style="list-style-type: none"> <li>• This category includes one propane storage facility and fuel tank farm.</li> <li>• Significant fuel loads are stored on site.</li> <li>• Fires and explosions are possible.</li> <li>• Evacuations may be necessary.</li> <li>• Unknown commodities may be on site.</li> <li>• Hazardous materials are on site.</li> <li>• Perth Fire Services must be able to easily access these occupancies.</li> <li>• It may take time and resources to verify that the buildings comply with OFC and OBC regulations.</li> </ul>	Unlikely	Major	<b>Moderate</b>
Warehouse	8	No data.	<ul style="list-style-type: none"> <li>• Significant fuel loads are stored on site.</li> <li>• Staff may lack awareness of emergency procedures.</li> <li>• Unknown commodities may be on site.</li> <li>• Hazardous materials may be on site.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>

Table 12. Other occupancies or non-occupancies in Perth.

Type of Building	Number of Buildings	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Occupancy not classified	8	No data.	<ul style="list-style-type: none"> <li>Inspections are required to determine the use of these buildings.</li> </ul>	Unlikely	Moderate	<b>Moderate</b>

### **4.3.3 Building Stock Considerations**

#### **Number of Residential Occupancies**

The most prevalent type of building stock in Perth is residential housing. Although 61 per cent of the town's residential housing stock is single-detached homes, there are over 330 multi-residential buildings in the community.

According to Perth's housing statistics, roughly two-thirds of the town's multi-residential buildings are rental properties.

#### **Building Age and Location**

As noted above, the age and type of a building both affect the likelihood and consequences of a fire occurring on the premises. Often, older municipalities contain many buildings that were constructed before the implementation of the OBC. As a result, those buildings are less likely to have the same life safety systems and equipment as newer buildings.

As of this CRA, Perth contains 2,191 buildings that were constructed before the introduction of the OBC. That number represents 56 per cent of the town's building stock. Many of the older buildings are located in the town's downtown core.

## **4.4 Inspections**

### **4.4.1 Legislation Governing Inspections**

As per O. Reg. 365/13:

- A fire department must complete a fire safety assessment and inspection each time it receives a complaint about a specific building's OFC compliance.
- A fire department must complete a fire safety assessment and inspection each time it receives a request to verify a specific building's OFC compliance.

Other regulations that govern building inspections are as follows:

- O. Reg. 364/13: This legislation requires vulnerable occupancies to undergo fire safety assessments and inspections and complete annual fire drills.
- OFC, section 2.8.2: This legislation requires applicable occupancies to have a fire safety plan prepared, approved, and implemented.
- OFC, section 2.13: This legislation mandates the installation of smoke alarms.
- OFC, section 2.16: This legislation mandates the installation of CO alarms.

Fire safety legislation also requires each municipality to have a smoke/CO program that includes OFC inspection and enforcement components.

#### 4.4.2 Building Inspections in Perth

##### Summary of Inspection Frequency

The Perth Development Services department is responsible for ensuring that the town’s buildings comply with all applicable OBC regulations.

Building owners must also make sure their properties comply with the OFC. However, it is common for building owners to neglect regular compliance inspections and instead only take part in an inspection when a building permit is issued or required.

The following tables list Perth Fire Services’ inspection statistics from 2019 and 2023:

- Table 13 summarizes the number of inspections Perth Fire Services completed from 2019 to 2023.
- Table 14 summarizes the reasons for the inspections Perth Fire Services conducted from 2019 to 2023.
- Table 15 summarizes the number of violations Perth Fire Services identified and the number of notices it issued from 2019 to 2023.

Table 13. Inspections by occupancy type, 2019 to 2023

Type of Occupancy	2019	2020	2021	2022	2023	Total
Commercial	1	7	6	10	11	35
Multi-residence	15	9	20	17	37	98
Mixed-use	4	4	8	6	12	34
Vulnerable occupancies	6	7	7	7	7	34
Others	0	0	39	35	95	169
<b>Total Number of Inspections</b>	<b>26</b>	<b>27</b>	<b>80</b>	<b>75</b>	<b>162</b>	<b>370</b>



Table 14. Inspection reasons, 2019 to 2023.

Year	Complaint Inspection	Owner Request	Sale Request	Vulnerable Occupancies	Other	Total
2019	1	4	8	6	7	26
2020	4	5	4	7	6	26
2021	16	56	1	7	0	80
2022	20	40	5	7	4	76
2023	29	105	8	7	13	162
<b>Total</b>	<b>70</b>	<b>210</b>	<b>26</b>	<b>34</b>	<b>30</b>	<b>370</b>

Table 15. Violations and issued notices, 2019 to 2023.

Year	Verbal	Letter	FSIR	Order	Total	Resolved #	Resolved %
2019	0	19	9	12	40	25	63%
2020	2	18	1	8	29	15	52%
2021	59	5	0	16	80	72	90%
2022	53	10	0	17	80	68	85%
2023	128	13	0	21	162	149	92%
<b>Total</b>	<b>242</b>	<b>65</b>	<b>10</b>	<b>74</b>	<b>391</b>	<b>329</b>	<b>84%</b>

### Observations and Findings

As noted in the tables above, Perth Fire Services has made significant progress regarding inspections. For example, in 2021 and 2022, Perth Fire Services issued and resolved significantly more violations than in previous years. If it can keep resolving the issues it identifies while conducting inspections, Perth Fire Services will help reduce the potential liability that Perth may incur if a fire-related incident occurs.

Overall, Perth Fire Services has taken a proactive approach to reducing the risk of fires occurring in Perth. As of this CRA, Perth Fire Services completes inspections by request and complaints (which places it in compliance with O. Reg. 365/13), and it inspects vulnerable occupancies as required (which places it in compliance with O. Reg. 364/13).

#### 4.5 Risks Identified by the Building Stock Profile

Table 16 summarizes the risks identified by the building stock profile for Perth.

Table 16. Building stock profile risk summary.

Risk	Likelihood	Consequence	Risk Level
Fire in residential occupancy	Almost certain	Moderate	High
Fire or explosion in industrial occupancy	Likely	Catastrophic	High
Fire in downtown core	Likely	Major	High

For more information about the risks identified by this profile, refer to the following sections of this CRA:

- Section 12: This section contains the risk level matrix used to calculate the overall likelihood levels and risk scores for the indicated risks.
- Section 13: This section contains the RTPs developed for the indicated risks.

## 5.0 Critical Infrastructure Profile

### 5.1 Context of a Critical Infrastructure Profile

As per OFM-TG-02-2019, a critical infrastructure (“CI”) profile examines the capabilities and limitations of a community’s CI.

CI includes the interconnected networks, services, and systems that meet vital human needs, sustain the economy, and protect public safety. Typical forms of CI include the following:

- electricity distribution
- water distribution
- telecommunications
- hospitals

A CRA includes a CI profile because the presence, availability, and capacity of CI can significantly impact factors such as:

- dispatch
- communications
- transportation
- fire suppression services
- community healthcare

If any of its CI services or systems become compromised, a community may be put at a high level of risk. The size or design of a specific type of CI may also pose a risk to the community.

A fire department can use the information in a CI profile to set response priorities and develop strategies to ensure it can meet the community’s public safety education, fire prevention, and emergency response pre-planning needs.

### 5.2 Critical Infrastructure in Perth

Table 17 summarizes the CI found in Perth (based on information provided by the town’s community emergency management coordinator and the Perth Emergency Response Plan). The table indicates applicable fire and life safety issues, concerns, and observations for each type of CI.

Table 17. Critical infrastructure in Perth.

Critical Infrastructure	Issues, Concerns, and Observations
Electricity distribution	<ul style="list-style-type: none"> <li>• Hydro One provides electricity in Perth.</li> <li>• Minor power outages lasting under 24 hours occur in Perth at least once a year.</li> <li>• Major power outages occurred in 1998 and 2003.</li> <li>• There are three transformer stations in Perth.</li> <li>• Hydro generation and distribution requires large transmission lines and towers.</li> <li>• Hydro lines are above ground in many areas.</li> </ul>
Natural gas distribution	<ul style="list-style-type: none"> <li>• Enbridge Gas provides year-round service.</li> <li>• There are various distribution systems throughout the town.</li> <li>• There are large distribution mains in some areas.</li> </ul>
Water distribution	<ul style="list-style-type: none"> <li>• Perth has a water distribution system.</li> <li>• Perth has municipal fire hydrants.</li> <li>• There are water flow concerns in some areas.</li> <li>• Water main breaks may occur.</li> <li>• Chemical spills may occur.</li> </ul>
Stormwater	<ul style="list-style-type: none"> <li>• Localized flooding may occur.</li> </ul>
Wastewater plant	<ul style="list-style-type: none"> <li>• Electrical fires may occur.</li> <li>• Rescues may be required.</li> </ul>
Landfill	<ul style="list-style-type: none"> <li>• Garbage contains unknown materials, which can pose fire risks.</li> <li>• Hazardous materials incidents may occur.</li> </ul>
CPKC railway	<ul style="list-style-type: none"> <li>• The railway's main line runs through Perth.</li> <li>• Some trains transport hazardous materials.</li> <li>• A major rail incident may cause a fire.</li> </ul>
Roads and highways	<ul style="list-style-type: none"> <li>• Perth, the Province of Ontario, and the County of Lanark roads departments service the various roadways in Perth.</li> <li>• Winter maintenance and other road maintenance work are vital to the delivery of fire protection services.</li> </ul>

Critical Infrastructure	Issues, Concerns, and Observations
Telecommunications	<ul style="list-style-type: none"> <li>• Cellular service is available in most of Perth; however, there are coverage issues in some areas.</li> <li>• Bell Canada offers landline service in the area.</li> <li>• Bell lines are above ground in some areas.</li> <li>• The functionality of these systems can become severely affected by damage to poles and towers.</li> </ul>
Radio systems and 911 communication systems	<ul style="list-style-type: none"> <li>• Perth Fire Services' communication systems rely heavily on radio towers and phone/internet lines, including dispatch and paging.</li> <li>• The Perth Roads Department relies on towers.</li> <li>• The functionality of these systems can become severely affected by damage to poles and towers.</li> <li>• The County of Lanark manages the 911 service in Perth, supporting both landline and cellular emergency calls.</li> <li>• 911 operators provide civic address information to emergency responders.</li> </ul>
Municipal buildings	<ul style="list-style-type: none"> <li>• Perth has a single fire station.</li> <li>• The fire station is used as Perth's primary emergency operations centre.</li> <li>• The Perth Roads Department building contains a fueling system.</li> </ul>
Town Administration Building	<ul style="list-style-type: none"> <li>• This building serves as Perth's main administrative office.</li> <li>• This building is used for Council meetings.</li> <li>• This building is also used as Perth's backup emergency operations centre.</li> </ul>
Community shelters and arenas	<ul style="list-style-type: none"> <li>• These buildings can serve as reception areas during emergencies.</li> <li>• These buildings can host social gatherings.</li> <li>• These buildings can help facilitate community connections.</li> </ul>

Critical Infrastructure	Issues, Concerns, and Observations
Important government buildings	<ul style="list-style-type: none"> <li>• These buildings include the post office, Service Canada, and Service Ontario.</li> <li>• These buildings provide communication services and allow people to access services and programs such as unemployment and disability programs.</li> </ul>
OPP station	<ul style="list-style-type: none"> <li>• The Perth detachment of the OPP is located on Highway 7.</li> <li>• The OPP also provides service from other detachments in Lanark County.</li> <li>• There may be people in the cells.</li> <li>• There is ammunition on the premises.</li> </ul>
Hospital/medical care facility	<ul style="list-style-type: none"> <li>• These facilities contain vulnerable people.</li> <li>• There are compressed gases on the premises.</li> <li>• There may be a biohazard risk.</li> <li>• The hospital is a high-rise building.</li> <li>• If an incident occurs, a large-scale evacuation may be required.</li> </ul>
Paramedic facility	<ul style="list-style-type: none"> <li>• Lanark County Paramedic Services provides emergency medical services from its base at the Perth &amp; Smith Falls District Hospital.</li> <li>• Lanark County Paramedic Services also operates out of bases in Carleton Place, Smith Falls, Lanark, and Almonte.</li> </ul>

### 5.3 Risks Identified by the Critical Infrastructure Profile

Table 18 summarizes the risks identified by the critical infrastructure profile for Perth.

Table 18. Critical infrastructure profile risk summary.

Risk	Likelihood	Consequence	Risk Level
Rail incident	Likely	Major	High
Flooding	Likely	Moderate	Moderate
Critical infrastructure failure	Likely	Minor	Moderate

For more information about the risks identified by this profile, refer to the following sections of this CRA:

- Section 12: This section contains the risk level matrix used to calculate the overall likelihood levels and risk scores for the indicated risks.
- Section 13: This section contains the RTPs developed for the indicated risks.

## 6.0 Demographic Profile

### 6.1 Context of a Demographic Profile

As per OFM-TG-02-2019, a demographic profile examines a community's population based on the following factors:

- size and dispersion
- age
- gender
- cultural background
- level of education
- socioeconomic makeup
- transient population

When a fire department knows its community's demographics, it can identify specific groups that may be at high risk of suffering or causing a fire or other emergency. The fire department can then develop programs and outreach initiatives to communicate with those groups and reduce fire risk in the community.

As it develops public safety initiatives, a fire department must ensure that it respects the demographics in its community. Doing so will allow the fire department to provide all residents with programs and services that are meaningful to them.

### 6.2 Population

#### 6.2.1 Permanent Residents

According to the 2021 Statistics Canada census, Perth has a population of 6,469 residents. This number represents an increase of 9.1 per cent from 2016 to 2021.

An examination of Perth's population history shows that the town has not experienced a drastic change in its number of residents from 1996 to 2021. However, the population of Lanark County population has steadily increased during the same period.

Table 19 shows the changes in the populations of Perth and Lanark County since 1996.



Table 19. Perth and Lanark County population increase/decrease, 1996 to 2021.

Year	Perth Pop.	Change %	Lanark Pop.	Change %
1996	5,886	N/A	59,845	N/A
2001	6,003	+2.0%	62,945	+5.2%
2006	5,907	-1.6%	63,785	+1.3%
2011	5,840	-1.1%	65,667	+3.0%
2016	5,930	+1.5%	68,698	+4.6%
2021	6,469	+9.1%	75,760	+10.3%

### 6.2.2 Transient and Seasonal Population

There are very few seasonal cottages or similar dwellings in the town, which means Perth does not experience a significant influx of seasonal residents. However, Perth is a hub for the surrounding area, and many residents of neighbouring municipalities travel to the town to visit its many shops or restaurants.

The majority of seasonal residents in Perth are students attending post-secondary education at Algonquin College. The students rent homes and other lodging accommodations during the school year.

### 6.3 Age

Table 20 compares the age distribution in Perth to the Province of Ontario (based on the findings of the 2021 Statistics Canada census).

Table 20. Age distribution in Perth compared to the Province of Ontario.

Age Range	Perth	Ontario
0 to 14 years	10.7%	15.8%
15 to 54 years	50.3%	44.1%
55 to 64 years	15.6%	21.5%
65 years and over	38.9%	18.5%

The census also notes the following age-related information:

- The average age in Perth is 52.7 (compared to the provincial average of 41.8).
- The median age in Perth is 58.4 (compared to the provincial median of 41.6).

## 6.4 Language and Cultural Considerations

It is essential for fire departments to acknowledge language and cultural considerations when developing community programs and services.

From a communications perspective, not all residents speak English as their first language. This means fire prevention and public education materials must account for possible language barriers.

From a cultural perspective, many ethnicities have differing fire safety practices, which means fire departments must ensure they develop programs that promote safety while respecting cultural beliefs.

### Language Considerations in Perth

According to the 2021 Statistics Canada census, Perth is a predominantly English-speaking community, with 93.5 per cent of its population identifying English as their first language. Overall, 99.8 per cent of the town's residents speak English at a conversational level, and 10.6 per cent are bilingual in English and French.

### Cultural Considerations in Perth

According to the 2021 Statistics Canada census:

- 79.7 per cent of Perth's residents were born in Canada to parents who were both born in Canada.
- 12.5 per cent of Perth's residents were born in Canada to parents and had at least one parent born outside of Canada.
- 7.7 per cent of Perth's residents were born outside of Canada.

According to the 2021 Statistics Canada census, the five most prominent ethnic or cultural origins in Perth are:

1. Scottish: 36.3 per cent of residents have Scottish ancestry.
2. Irish: 35.5 per cent of residents have Irish ancestry.
3. English: 30.6 per cent of residents have English ancestry.
4. Canadian: 15.7 per cent of residents have Canadian ancestry.
5. French (not otherwise specified): 14.9 per cent of residents have French ancestry.

## 6.5 Level of Education

Table 21 compares the highest level of education among Perth’s residents aged 15 years and over to the provincial average (based on the findings of the 2021 Statistics Canada census).

Table 21. Education levels in Perth compared to the Province of Ontario.

Education Level	Perth	Ontario
No certificate	15.9%	15.3%
High school	30.0%	27.2%
Some post-secondary	54.1%	57.5%

## 6.6 Socioeconomic Makeup

Table 22 lists the socioeconomic makeup of Perth in 2020 (based on the findings of the 2021 Statistics Canada census).

Table 22. Socioeconomic statistics for Perth, 2020.

Statistic	Perth	Ontario
Number of total income recipients aged 15 years and over in private households.	5,425	11,294,815
Average total income among recipients	\$46,840	\$56,350
Average after-tax income among recipients	\$40,240	\$46,280
Average family size of economic families	2.6 people	3.1 people
Average total income of economic family	\$101,900	\$137,200
Average after-tax income of economic family	\$87,000	\$112,200
Prevalence of low income based on the low-income measure, after tax	14.0%	10.1%

## 6.7 Schools, Childcare Centres, and Vulnerable Occupancies

Perth Fire Services must keep itself aware of all schools, childcare centres, and vulnerable occupancies in Perth, as these sites may be at a heightened risk of fire or other emergencies.

## Schools

Table 23 lists the schools in Perth and indicates applicable demographic considerations for each site.

Table 23. List of schools in Perth.

School	Type of School	Students/Staff
The Queen Elizabeth School	Elementary (French immersion)	328
St. John Catholic Elementary	Elementary	414
The Stewart School	Elementary	394
Perth Children’s House Montessori School	Pre-elementary and elementary	58
St. John Catholic High School	Secondary	550
Perth & District Collegiate Institute	Secondary	873
Algonquin College	Post-Secondary	115

## Childcare Centres

Table 24 lists the childcare centres in Perth and indicates applicable demographic considerations for each site

Table 24. List of childcare centres in Perth.

Day Care Centre	Children	Staff
Tayside Daycare – 100 Wilson Street	42	9
Tayside Daycare – 2066 Scotch Line	42	9
Tayside Daycare – 80 Wilson Street	30	2
Tayside Daycare – 7 Sunset	30	2
Tayside Daycare – 34 Wilson St. e	45	4

## Vulnerable Occupancies

Table 23 lists the vulnerable occupancies in Perth and indicates applicable demographic considerations for each site.

Table 25. List of vulnerable occupancies in Perth.

<b>Vulnerable Occupancy</b>	<b>Type of Facility</b>	<b>Beds</b>	<b>Staff</b>
Lanark Lifestyles	Retirement Home	95	30 (day) 3 (night)
Aspira Carolina Retirement Living	Retirement Home	120	30 (day) 2 (night)
Perth and Smiths Falls District Hospital	Hospital	75 to 130	43 to 50
Brady House	Care Support Home	6 to 8	2-3 (day) 1 (night)
Cameron House	Care Support Home	8 to 10	3 (day) 1 (night)
Decon House	Care Support Home	7 to 9	2 (day) 1 (night)
Rimmer House	Care Support Home	6 to 7	2 (day) 1 (night)

## 6.8 Demographic Profile Summary

Table 26 summarizes the demographic considerations discussed above and indicates applicable fire and life safety issues, concerns, and observations.

Table 26. Demographic profile summary for Perth.

Demographic Consideration	Issues, Concerns, and Observations
Age	<ul style="list-style-type: none"> <li>• Over half of Perth’s population is over the age of 55.</li> <li>• It takes time and resources to verify that seniors have working smoke alarms in their residences.</li> <li>• Older residents may lack the ability to implement fire safety measures in their homes.</li> <li>• Some older residents may lack the ability to exit a building independently.</li> <li>• It can be difficult to communicate fire and life safety information to seniors due to their existing knowledge, practices, and beliefs.</li> <li>• Some older residents do not use newer methods of communication (such as social media) to check for news updates or related information. If Perth Fire Services only uses newer communication methods to deliver public education, some residents may not receive important messages.</li> </ul>
Level of education	<ul style="list-style-type: none"> <li>• 15.9% of Perth’s population does not have a high school diploma or equivalent.</li> <li>• Perth Fire Services must strive to provide all residents with fire prevention materials and public fire safety education that are clear and applicable to them.</li> </ul>
Socioeconomic makeup	<ul style="list-style-type: none"> <li>• The average Perth resident earns a salary that is approximately \$10,000 less than provincial average.</li> <li>• Perth has an above-average number of residents under the low-income measure, after tax threshold.</li> </ul>

Demographic Consideration	Issues, Concerns, and Observations
Schools	<ul style="list-style-type: none"> <li>• It takes time and resources to verify that schools conduct fire drills.</li> <li>• It takes time and resources to verify that applicable school staff can carry out the duties listed in their fire safety plans.</li> <li>• It takes time and resources to visit schools to deliver education about fire and life safety.</li> <li>• On-site visits to schools are needed to identify hazards and determine risk levels.</li> </ul>
Day cares	<ul style="list-style-type: none"> <li>• It takes time and resources to conduct site visits at childcare centres to identify potential hazards and answer questions that staff members may have.</li> </ul>
Vulnerable occupancies	<ul style="list-style-type: none"> <li>• It takes time and resources to verify that all vulnerable occupancies in Perth conduct the required fire drills.</li> <li>• It takes time and resources to complete mandatory inspections of all vulnerable occupancies in Perth.</li> </ul>

## 6.9 Risks Identified by the Demographic Profile

Table 27 summarizes the risks identified by the demographic profile for Perth.

Table 27. Demographic profile risk summary.

Risk	Likelihood	Consequence	Risk Level
Fire in residential occupancy	Almost certain	Moderate	<b>High</b>

For more information about the risks identified by this profile, refer to the following sections of this CRA:

- Section 12: This section contains the risk level matrix used to calculate the overall likelihood levels and risk scores for the indicated risks.
- Section 13: This section contains the RTPs developed for the indicated risks.

## 7.0 Hazard Profile

### 7.1 Context of a Hazard Profile

As per OFM-TG-02-2019, a hazard profile examines the natural, technological, and human-made threats a community might face, such as:

- severe weather (such as freezing rain, ice storms, tornadoes, or hurricanes)
- forest fires
- floods
- transportation emergencies
- cyber-attacks
- human health emergencies
- energy supply disruptions
- hazardous materials spills

It is vital for the local fire department to review all potential risks identified in the hazard profile section of its CRA. The fire department must also understand which of those risks it is expected to respond to if an emergency occurs.

### 7.2 Hazards in the Town of Perth

#### Severe Weather Event

A severe weather event (such as an ice storms, windstorm, or tornado) can impact Perth in the following ways:

- Power interruptions may occur.
- Severe weather may disrupt communication services.
- Perth's residents and visitors may be unprepared for severe weather, especially those unfamiliar with the area.
- Some severe weather conditions may cause delays in emergency responses.

#### Rail Incident

A rail incident can impact Perth in the following ways:

- Fires may occur.
- Explosions may occur.
- Injuries may occur.



- Deaths may occur.
- Perth Fire Services may need to rescue trapped or injured people.
- Trains may be carrying hazardous materials.
- If a rail incident blocks a level crossing, Perth Fire Services may not be able to access the northern portion of Perth.

### **Road/Highway Incident**

A road/highway incident can impact Perth in the following ways:

- Fires may occur.
- Explosions may occur.
- Injuries may occur.
- Deaths may occur.
- Perth Fire Services may need to rescue trapped or injured people.

### **Flooding**

Flooding can occur after a body of water overflows, which often happens after heavier-than-usual rainfall. Flooding can impact Perth in the following ways:

- Emergency responders may need to rescue endangered people.
- Flooding may prevent emergency responders from accessing certain areas of Perth.
- Flooding may damage properties or critical infrastructure.

### **Hazardous Materials Incident**

A hazardous materials incident can impact Perth in the following ways:

- Environmental impacts are possible.
- Evacuations may be required.
- Injuries may occur.
- Deaths may occur.

### **Rescue Incident**

A rescue incident may require Perth Fire Services to:

- Rescue individuals trapped in vehicles.

- Rescue individuals trapped inside machinery.
- Rescue individuals trapped or stranded on ice.
- Rescue individuals stranded in the water.

Some incidents may also require Perth Fire Services to rescue individuals who become injured in areas with limited access points, such as hiking trails.

If firefighters are not properly trained to perform rescues—or if they lack the proper rescue equipment—they may injure themselves or others.

### 7.3 Risks Identified by the Hazard Profile

Table 28 summarizes the risks identified by the hazard profile for Perth.

Table 28. Hazard profile risk summary.

Hazard	Likelihood	Consequence	Risk Level
Severe weather event	Likely	Major	High
Rail incident	Likely	Major	High
Road/highway incident	Almost certain	Moderate	High
Flooding	Likely	Moderate	Moderate
Hazardous materials incident	Possible	Moderate	Moderate
Rescue incident	Possible	Minor	Moderate

For more information about the risks identified by this profile, refer to the following sections of this CRA:

- Section 12: This section contains the risk level matrix used to calculate the overall likelihood levels and risk scores for the indicated risks.
- Section 13: This section contains the RTPs developed for the indicated risks.

## 8.0 Public Safety Response Entities Profile

### 8.1 Context of a Public Safety Response Entities Profile

As per OFM-TG-02-2019, a public safety response entities profile examines the organizations that respond to emergencies in the community. Aside from fire departments, the most common public safety response agencies are police and paramedic services.

A public safety response entities profile considers the following questions:

- What incidents do the non-fire department organizations respond to?
- What are the response capabilities of the non-fire department organizations?
- Does the fire department have any potential interdependencies?

This profile gives a fire department information it can use to determine the types of services it should provide. For instance, a community may have an industrial facility with its own internal fire services crew. If so, that crew may have the capacity to assist or relieve the local fire department of specific response duties at the facility. Conversely, the internal fire services crew may have service limitations the local fire department should know about.

A public safety response entities profile can also provide insight into the benefits of establishing a tiered/joint response to various emergencies. Such insights can help a fire department identify risk treatment options based on shared responsibilities.

By understanding the capacity of public response agencies in the community, a fire department can set its level of service accordingly.

### 8.2 Public Safety Response Entities in Perth

Table 29 lists the public safety response agencies in Perth. The table indicates the jurisdiction and responsibilities of each agency, as well as the potential issues that might affect their operations during an emergency response.

Table 29. Public safety response agencies in Perth.

Response Agency	Types of Incidents	Roles and Responsibilities	Issues or Concerns
Ontario Provincial Police	<ul style="list-style-type: none"> <li>• Fires</li> <li>• Explosions</li> <li>• Sudden deaths</li> <li>• Road and highway incidents</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure the incident scene is secure.</li> <li>• Assist with investigations.</li> <li>• Investigate collisions, deaths, and criminal activity.</li> <li>• Control traffic.</li> </ul>	<ul style="list-style-type: none"> <li>• No issues or concerns.</li> </ul>
Office of the Fire Marshal	<ul style="list-style-type: none"> <li>• Fires that meet the FPPA's criteria</li> <li>• Explosions that meet the FPPA's criteria</li> <li>• Large-scale emergencies</li> </ul>	<ul style="list-style-type: none"> <li>• Investigate explosions and fires that meet the FPPA's criteria.</li> <li>• Assist police with investigations.</li> <li>• Provide advice during large-scale emergencies (if needed).</li> <li>• Provide limited equipment for large-scale emergencies.</li> </ul>	<ul style="list-style-type: none"> <li>• Delayed response times are possible.</li> </ul>
Hydro One	<ul style="list-style-type: none"> <li>• Fires</li> <li>• Downed power lines</li> <li>• Electrical fires in transmission equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure the affected area is safe.</li> <li>• Isolate electrical services.</li> <li>• Repair electrical infrastructure.</li> <li>• Restore electrical services.</li> </ul>	<ul style="list-style-type: none"> <li>• Delayed response times are possible.</li> <li>• Lengthy outages are possible.</li> </ul>
Technical Standards and Safety Authority	<ul style="list-style-type: none"> <li>• Fires</li> <li>• Carbon monoxide emergencies</li> <li>• Elevator emergencies</li> </ul>	<ul style="list-style-type: none"> <li>• Assist with investigations.</li> <li>• Provide limited training.</li> </ul>	<ul style="list-style-type: none"> <li>• Delayed response times are possible.</li> </ul>
Enbridge Gas	<ul style="list-style-type: none"> <li>• Gas leaks</li> <li>• Carbon monoxide emergencies</li> </ul>	<ul style="list-style-type: none"> <li>• Assist in carbon monoxide investigations.</li> <li>• Shut off gas services.</li> <li>• Repair gas lines and assist with leaks.</li> </ul>	<ul style="list-style-type: none"> <li>• Delayed response times are possible due to extensive travel times.</li> </ul>

Response Agency	Types of Incidents	Roles and Responsibilities	Issues or Concerns
Rideau Valley Conservation Authority	<ul style="list-style-type: none"> <li>• Flooding</li> </ul>	<ul style="list-style-type: none"> <li>• Assist with flood forecasting.</li> <li>• Provide flood modeling.</li> <li>• Control water flow.</li> </ul>	<ul style="list-style-type: none"> <li>• No issues or concerns.</li> </ul>
Lanark County Paramedic Service	<ul style="list-style-type: none"> <li>• Fires</li> <li>• Explosions</li> <li>• Medical emergencies</li> </ul>	<ul style="list-style-type: none"> <li>• Care for patients.</li> <li>• Transport patients as needed.</li> <li>• Monitor firefighter health at fire scenes.</li> </ul>	<ul style="list-style-type: none"> <li>• No issues or concerns.</li> </ul>
Ministry of the Environment	<ul style="list-style-type: none"> <li>• Hazardous spills</li> <li>• Hazardous materials incidents</li> </ul>	<ul style="list-style-type: none"> <li>• Order the cleanup of spill sites.</li> <li>• Assist with controlling spills and the release of substances.</li> </ul>	<ul style="list-style-type: none"> <li>• No issues or concerns.</li> </ul>
CPKC Rail Police	<ul style="list-style-type: none"> <li>• Rail incidents (including spills and derailments)</li> </ul>	<ul style="list-style-type: none"> <li>• Assist with rail incidents</li> </ul>	<ul style="list-style-type: none"> <li>• Delayed response times are possible.</li> </ul>
Leeds, Grenville, and Lanark District Health Unit	<ul style="list-style-type: none"> <li>• Domestic water incidents</li> </ul>	<ul style="list-style-type: none"> <li>• Issue boiling water advisories.</li> <li>• Assist with health issues.</li> </ul>	<ul style="list-style-type: none"> <li>• No issues or concerns.</li> </ul>
Ministry of Transportation	<ul style="list-style-type: none"> <li>• Fires</li> <li>• Explosions</li> <li>• Road and highway incidents</li> </ul>	<ul style="list-style-type: none"> <li>• Close roads as needed.</li> <li>• Repair roads as needed.</li> <li>• Provide winter maintenance for roads.</li> <li>• Provide regular maintenance for roads.</li> </ul>	<ul style="list-style-type: none"> <li>• No issues or concerns.</li> </ul>
Lanark County Roads Department	<ul style="list-style-type: none"> <li>• Fires</li> <li>• Explosions</li> <li>• Road and highway incidents</li> </ul>	<ul style="list-style-type: none"> <li>• Close roads as needed.</li> <li>• Repair roads as needed.</li> <li>• Provide winter maintenance for roads.</li> <li>• Provide regular maintenance for roads.</li> </ul>	<ul style="list-style-type: none"> <li>• No issues or concerns.</li> </ul>

Response Agency	Types of Incidents	Roles and Responsibilities	Issues or Concerns
Town of Perth Roads Department	<ul style="list-style-type: none"><li>• Fires</li><li>• Explosions</li><li>• Road and highway incidents</li></ul>	<ul style="list-style-type: none"><li>• Close roads as needed.</li><li>• Repair roads as needed.</li><li>• Provide winter maintenance for roads.</li><li>• Provide regular maintenance for roads.</li></ul>	<ul style="list-style-type: none"><li>• No issues or concerns.</li></ul>

### **8.3 Risks Identified by the Public Safety Response Entities Profile**

The public safety response entities profile for Perth does not identify any current threats to the town. However, the town and Perth Fire Services should review the information in this profile carefully, as it is important for them to know the capabilities and limitations of the available public response agencies. It is also in the town's best interest to maintain good working relationships with those organizations. Doing so will help improve communication and response efforts during emergencies.

Perth must recognize that Perth Fire Services is not equipped to deal with all potential incidents that can occur in the community. Some responses may require equipment Perth Fire Services lacks. Other incidents may require emergency responders to have specialized training that Perth Fire Services' personnel have not received. If such an incident occurs, Perth Fire Services' only responsibilities may be to contact the appropriate response agency and maintain scene security until a representative of that organization arrives.

## 9.0 Community Services Profile

### 9.1 Context of a Community Services Profile

As per OFM-TG-02-2019, a community services profile examines the organizations that can help the local fire department:

- Distribute public safety education.
- Conduct OFC inspections or enforcement.
- Conduct emergency responses.

Community service groups can also:

- Provide financial assistance.
- Provide venues for training or exercises.
- Provide access to high-risk groups.
- Provide temporary shelter.

It is important to take note of all local community organizations and the assistance they can provide. The presence or absence of community services may dictate the types of emergencies the local fire department responds to, as well as the types of services the fire department must provide.

### 9.2 Community Services in Perth

Table 30 summarizes the community services in Perth that may have the capacity to assist Perth Fire Services when it responds to an emergency. The table also notes issues, concerns, and observations for each community service (as applicable).



Table 30. Community services in Perth.

Community Service	Assistance Provided	Issues, Concerns, and Observations
Health unit	<p>The health unit provides vulnerable persons with access to public education.</p> <p>The health unit also provides advice and services for firefighters who were exposed to contaminants during a response.</p>	<ul style="list-style-type: none"> <li>• There are no issues or concerns.</li> </ul>
Schools	<p>Schools are large assembly occupancies that can serve as evacuation spaces and warming/cooling centres.</p> <p>Schools are also locations where fire departments can deliver fire and life safety education programs.</p>	<ul style="list-style-type: none"> <li>• Due to the COVID-19 pandemic, Perth Fire Services was only able to deliver limited public education or code enforcement in schools from 2020 to 2021.</li> <li>• In 2022, regular delivery of public education programs and code enforcement resumed.</li> </ul>
Faith-based groups	<p>Churches in the community may offer support services for those who suffer a loss due to a fire or other emergency.</p>	<ul style="list-style-type: none"> <li>• The number of volunteers in the community has decreased due to the aging population.</li> </ul>
Red Cross	<p>Red Cross services can support the community during a large-scale emergency. For example, the Red Cross could help organize a temporary shelter for someone who has suffered a fire in their residence.</p>	<ul style="list-style-type: none"> <li>• There are no issues or concerns.</li> </ul>

Community Service	Assistance Provided	Issues, Concerns, and Observations
Social service organizations	<p>Home and Community Care Support Services coordinates access to supported living programs and long-term care. The organization also delivers public education and conducts fire prevention activities and programs. As such, the organization may be a viable partner for Perth Fire Services.</p> <p>Lanark County Social Services can arrange emergency shelter for fire victims.</p>	<ul style="list-style-type: none"> <li>As of this CRA, Perth Fire Services does not interact directly with Lanark County Social Services unless a large-scale evacuation incident occurs or shelters are required.</li> </ul>
Victim services	<p>Victim services professionals can provide immediate on-site crisis and trauma services. They can also help with urgent practical matters or help locate, arrange, or coordinate other services and resources.</p> <p>Victim services can be activated through the OPP and through Lanark County Social Services.</p>	<ul style="list-style-type: none"> <li>No issues or concerns.</li> </ul>
Rapid relief team	<p>Rapid relief teams provide rehabilitation resources for firefighters.</p> <p>Rapid relief teams also provide food and supplies for residents in need.</p> <p>Rapid relief teams support fire prevention activities and fire prevention week.</p>	<ul style="list-style-type: none"> <li>No issues or concerns.</li> </ul>

### **9.3 Risks Identified by the Community Services Profile**

The community services profile for Perth does not identify any current threats to the town. However, the town and Perth Fire Services should review the information in this profile carefully. Knowing the availability and limitations of the identified community services will help Perth integrate support from those organizations into its emergency responses as needed.

## 10.0 Economic Profile

### 10.1 Context of an Economic Profile

As per OFM-TG-02-2019, an economic profile examines the economic sectors that affect a community and support its financial sustainability. The profile views economic information from an overall public safety perspective while considering the following questions:

- What sectors influence the community's local economy?
- What potential impacts would the community suffer if it loses the sectors influencing its economy?
- Are there industrial or commercial occupancies in the community that provide significant economic production or jobs? If so, what are the potential risks that could impact those occupancies?

The information in an economic profile can help a fire department determine which fire protection services its community's different economic sectors require.

A fire department can also use the information in an economic profile to identify actions it can take to reduce the risk of incidents at local industrial or commercial occupancies, which can help reduce the risk of emergencies that require large-scale responses.

### 10.2 Employment

According to the 2021 Statistics Canada census, Perth's unemployment rate was 12.9 per cent in 2021, which is roughly on par with the provincial average of 12.2 per cent.

Perth is the economic centre of its area, and many residents of neighbouring municipalities commute into the town to work. Employers in Perth include large box stores, department stores, manufacturers, and government organizations.

### 10.3 Tourism

Every year, Perth hosts some of the largest festivals in Lanark County, including music festivals, culinary festivals (such as maple syrup and garlic festivals), and Christmas events. On average, the annual events attract almost 100,000 visitors. People who attend these festivals also visit the downtown core and support local businesses. In addition, tourists visiting the provincial parks in the Perth area often shop and dine in the town.

Some neighbouring municipalities have agreements with Perth that allow their residents to use the town's recreation facilities. Residents of neighbouring municipalities also travel to Perth to shop.

## 10.4 Agriculture

There are two farms operating in Perth. Both farms are visually inactive. As of this CRA, discussions are underway regarding using the farmlands for potential housing developments.

## 10.5 Downtown Core Businesses

Perth's downtown core is the cultural centre of the community. There are many small businesses in the downtown core, and these operations employ a modest number of workers.

## 10.6 Industrial Businesses

Perth's industrial district is located in the southern part of the town. There are several industrial businesses operating in the area. Perth's industrial facilities include a propane storage facility and a petroleum storage facility that houses gasoline, diesel, and furnace oil.

Overall, there are 64 industrial occupancies in Perth. The facilities provide jobs for residents of Perth, and they contribute a significant amount of tax revenue to the town.

## 10.7 Risks Identified by the Economic Profile

Table 31 summarizes the risks identified by the economic profile for Perth.

Table 31. Economic profile risk summary.

Risk	Likelihood	Consequence	Risk Level
Fire in residential occupancy	Almost certain	Moderate	High
Fire or explosion in industrial occupancy	Likely	Catastrophic	High
Fire in downtown core	Likely	Major	High

For more information about the risks identified by this profile, refer to the following sections of this CRA:

- Section 12: This section contains the risk level matrix used to calculate the overall likelihood levels and risk scores for the indicated risks.
- Section 13: This section contains the RTPs developed for the indicated risks.

## 11.0 Past Loss and Event History Profile

### 11.1 Context of a Past Loss and Event History Profile

As per OFM-TG-02-2019, a past loss and event history profile examines statistics about the fires and other emergencies a community has experienced in recent years.

Completing a past loss and event history profile involves the following tasks:

- Analyze the number and types of responses, injuries, deaths, and dollar losses.
- Assess previous response data.
- Compare local fire loss statistics with provincial fire loss statistics.

The data in a past loss and event history profile provides valuable insights regarding the trends, circumstances, behaviours, locations, and occupancies involved with previous fires. This information can guide a fire department as it develops public education initiatives and code inspection and enforcement programs to address the high-risk demographics and occupancies in its community.

A fire department should also review response data about its non-fire calls (such as responses to motor vehicle collisions and medical calls) to determine the level of risk and frequency of those emergencies. By reviewing response data about both fire calls and non-fire calls, a fire department gains an overall understanding of the type and level of fire protection services its community requires.

### 11.2 Loss History in Perth, 2019 to 2023

The past loss and event history profile for Perth assesses the town's fire loss statistics from the past five years.

Tables 32 to 36 show the following statistics for the years 2019 to 2023:

- the number of fires in Perth per building group
- the percentage of total fires in Perth per building group
- the percentage of total fires in Ontario per building group
- the amount of dollar loss in Perth per building group
- the number of injuries and deaths caused by fires in Perth per building group
- the known causes of fires in Perth per building group

Table 32. Fire loss statistics in Perth for 2019.

Occupancy	Fires	Perth %	ON %	\$ Loss	Injuries	Deaths	Causes
Group A (Assembly)	0	0%	2%	\$0	0	0	• N/A
Group B (Detention, Care, and Treatment)	0	0%	1%	\$0	0	0	• N/A
Group C (Residential)	3	60%	30%	\$840,000	0	0	<ul style="list-style-type: none"> <li>• Smoking materials</li> <li>• Cooking</li> </ul>
Groups D & E (Commercial and Mercantile)	1	20%	3%	\$10,000	0	0	• Electrical
Group F (Industrial)	1	20%	4%	\$10,000	0	0	• Undetermined
Other	0	0%	61%	\$0	0	0	• N/A
<b>Totals</b>	<b>5</b>			<b>\$860,000</b>	<b>0</b>	<b>0</b>	

Table 33. Fire loss statistics in Perth for 2020.

Occupancy	Fires	Perth %	ON %	\$ Loss	Injuries	Deaths	Causes
Group A (Assembly)	1	14%	1%	\$20,000	0	0	<ul style="list-style-type: none"> <li>• Electrical</li> </ul>
Group B (Detention, Care, and Treatment)	0	0%	0%	\$0	0	0	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
Group C (Residential)	3	43%	28%	\$15,500	0	0	<ul style="list-style-type: none"> <li>• Cooking</li> <li>• Smoking</li> </ul>
Groups D & E (Commercial and Mercantile)	0	0%	2%	\$0	0	0	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
Group F (Industrial)	0	0%	3%	\$0	0	0	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
Other	3	43%	65%	\$17,000	0	0	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
<b>Totals</b>	<b>7</b>			<b>\$52,500</b>	<b>0</b>	<b>0</b>	



Table 34. Fire loss statistics in Perth for 2021.

Occupancy	Fires	Perth %	ON %	\$ Loss	Injuries	Deaths	Causes
Group A (Assembly)	0	0%	1%	\$0	0	0	• N/A
Group B (Detention, Care, and Treatment)	0	0%	1%	\$0	0	0	• N/A
Group C (Residential)	1	17%	27%	\$10,000	0	0	• Electrical
Groups D & E (Commercial and Mercantile)	2	33%	2%	\$1,000	0	0	• Cooking • Electrical
Group F (Industrial)	0	0	3%	\$0	0	0	• N/A
Other	3	50%	66%	\$2,500	0	0	• Mechanical • Unknown • Cooking
<b>Totals</b>	<b>6</b>			<b>\$13,500</b>	<b>0</b>	<b>0</b>	

Table 35. Fire loss statistics in Perth for 2022.

Occupancy	Fires	Perth%	ON%	\$ Loss	Injuries	Deaths	Causes
Group A (Assembly)	0	0%	2%	\$0	0	0	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
Group B (Detention, Care, and Treatment)	0	0%	1%	\$0	0	0	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
Group C (Residential)	3	33%	46%	\$65,100	0	0	<ul style="list-style-type: none"> <li>• Electrical</li> <li>• Human error</li> </ul>
Groups D & E (Commercial and Mercantile)	0	0%	4%	\$0	0	0	<ul style="list-style-type: none"> <li>• N/A</li> </ul>
Group F (Industrial)	1	11%	5%	\$5,000	0	0	<ul style="list-style-type: none"> <li>• Human error</li> </ul>
Other	5	56%	42%	\$41,500	0	0	<ul style="list-style-type: none"> <li>• Mechanical</li> <li>• Electrical</li> <li>• Human error</li> </ul>
<b>Totals</b>	<b>9</b>			<b>\$111,600</b>	<b>0</b>	<b>0</b>	

Table 36. Fire loss statistics in Perth for 2023.

Occupancy	Fires	Perth %	ON %	\$ Loss	Injuries	Deaths	Causes
Group A (Assembly)	0	0%	No data	\$0	0	0	• N/A
Group B (Detention, Care, and Treatment)	0	0%	No data	\$0	0	0	• N/A
Group C (Residential)	4	80%	No data	\$956,000	1	0	<ul style="list-style-type: none"> <li>• Cooking</li> <li>• Smoking</li> <li>• Electrical</li> </ul>
Groups D & E (Commercial and Mercantile)	0	0%	No data	\$0	0	0	• N/A
Group F (Industrial)	0	0%	No data	\$0	0	0	• N/A
Other	1	20%	No data	\$2,500	0	0	• Undetermined
<b>Totals</b>	<b>5</b>			<b>\$958,500</b>	<b>1</b>	<b>0</b>	

Table 37 summarizes the information from the above tables. (Note: The Ontario percentage in this table only includes data from 2019 to 2022.)

Table 37. Total fire loss statistics in Perth, 2019 to 2023.

Occupancy	Fires	Perth %	ON %	Injuries	Deaths	\$ Loss
Group A (assembly)	1	3%	2%	0	0	\$20,000
Group B (detention, care, and treatment)	0	0%	1%	0	0	\$0
Group C (residential)	14	44%	31%	1	0	\$1,886,600
Groups D & E (commercial and mercantile)	3	9%	3%	0	0	\$11,000
Group F (industrial)	2	6%	3%	0	0	\$15,000
Other	12	38%	61%	0	0	\$63,500
<b>Totals</b>	<b>32</b>			<b>1</b>	<b>0</b>	<b>\$1,996,100</b>

### 11.3 Response Statistics for Perth Fire Services

#### 11.3.1 Type and Frequency of Emergency Responses

Table 38 lists Perth Fire Services' number of fire call responses from 2019 to 2023.

Table 38. Fire responses, 2019 to 2023.

Year	Loss Fires: Structures	Loss Fires: Other	Loss Fires: Vehicles	No Loss Fires	Non-Fire Calls	Total Calls
2019	5	0	0	1	82	88
2020	4	3	0	1	105	113
2021	1	2	1	3	104	111
2022	6	0	3	0	141	150
2023	4	0	1	0	130	135
<b>Total</b>	<b>20</b>	<b>5</b>	<b>5</b>	<b>5</b>	<b>562</b>	<b>597</b>

Figure 2 illustrates the types of emergency responses Perth Fire Services made from 2019 to 2023. The figure shows how frequently Perth Fire Services responded to each type of incident (based on the total number of emergency calls recorded during those years).

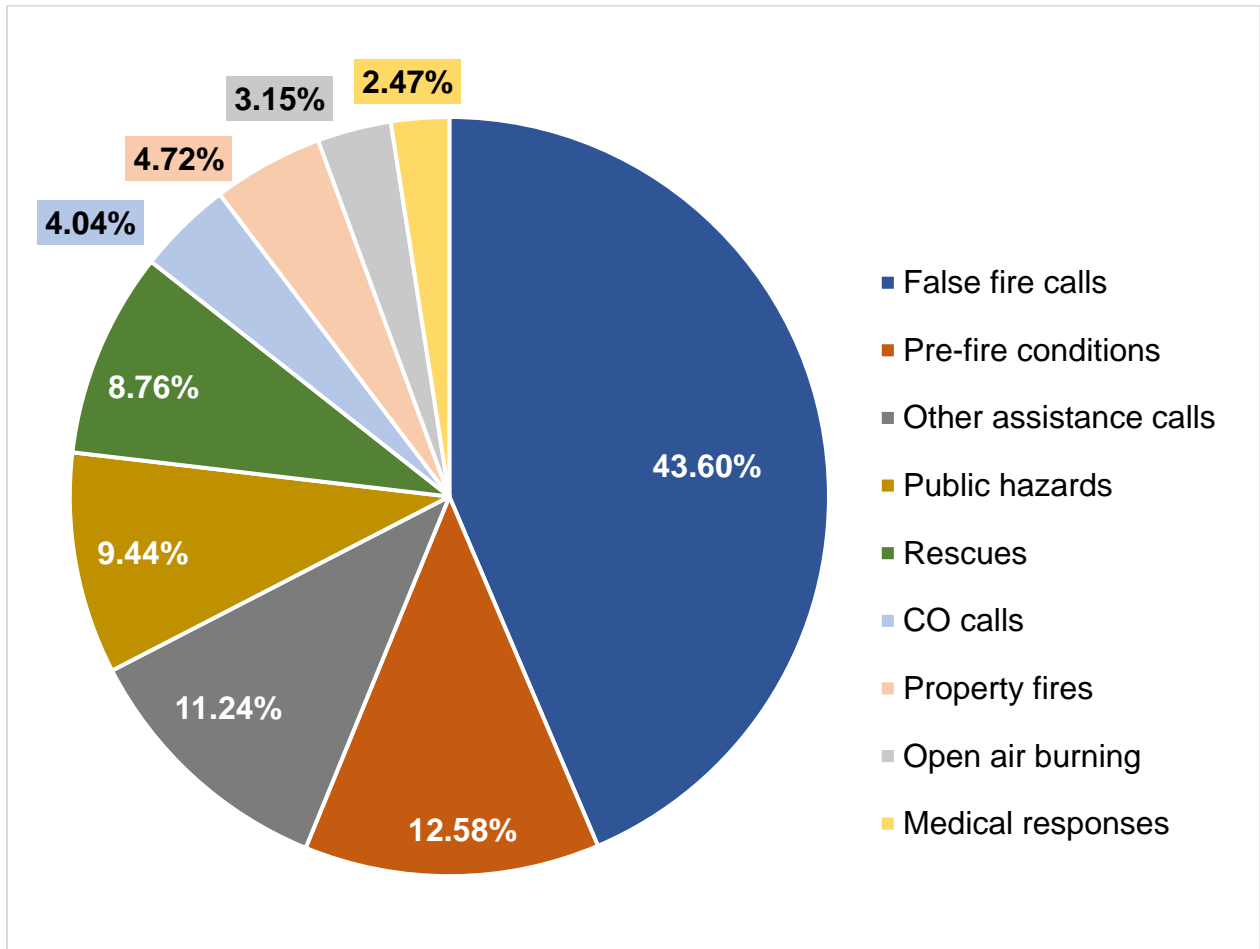


Figure 2. Types of call response, Perth Fire Services, 2019 to 2023.

As illustrated in the chart above, Perth Fire Services responded to 597 calls from 2019 and 2023, including 19 calls related to structure fires. During those years, responses related to property fires represented less than 5 per cent of Perth Fire Services' total responses. Between 2019 and 2023, most property fires in Perth occurred in residential occupancies.

Perth also experienced several industrial occupancy fires from 2019 to 2023, most of which resulted from issues with the on-site equipment. In each of those scenarios, Perth Fire Services enacted a quick emergency response and managed to limit the dollar loss the industrial facilities incurred.

#### 11.4 Risks Identified by the Past Loss and Event History Profile

Table 41 summarizes the risks identified by the past loss and event history profile for Perth.

Table 39. Past loss and event history profile risk summary.

Risk	Likelihood	Consequence	Risk Level
Fire in residential occupancy	Almost certain	Moderate	High
Fire or explosion in industrial occupancy	Likely	Catastrophic	High

For more information about the risks identified by this profile, refer to the following sections of this CRA:

- Section 12: This section contains the risk level matrix used to calculate the overall likelihood levels and risk scores for the indicated risks.
- Section 13: This section contains the RTPs developed for the indicated risks.

## 12.0 Scoring Methodology and Risk Matrix

### 12.1 Determining Risk Scores

The Loomex Group determined risk scores for the hazards it identified in Perth by assessing each threat’s likelihood and consequence levels. This process involved using a hazard identification and risk assessment (“**HIRA**”) scoring methodology developed by Emergency Management Ontario (“**EMO**”). However, The Loomex Group modified the consequence portion of the HIRA scoring system (as discussed below) to ensure that the scoring system in this CRA reflects the realities of delivering fire protection services.

### 12.2 Likelihood Scoring

The first component of the risk-scoring process is likelihood scoring. Likelihood levels are determined by thoroughly examining the results of the nine community profiles reviewed during a CRA’s development. Particular focus is given to the findings of the past loss and event history profile.

Table 42 explains each level of risk likelihood.

Table 40. Risk matrix likelihood levels.

Likelihood	Category	Rate of Occurrence	Likelihood Per Year
1	Rare	Occurs every 100 years or more.	Less than 1%
2	Very Unlikely	Occurs every 50 to 99 years.	1 to 2%
3	Unlikely	Occurs every 20 to 49 years.	2 to 5%
4	Probable	Occurs every five to 19 years.	5 to 20%
5	Likely	Occurs within a five-year period.	More than 20%
6	Certain	The hazard occurs annually.	100%

### 12.3 Consequence Scoring

The second component of the risk score process is consequence scoring. To complete the consequence scoring for this CRA, The Loomex Group used eight of the ten consequence categories in EMO’s HIRA methodology.

Table 41. Risk matrix consequence levels.

Consequence Type	No Consequence	Low Consequence	Moderate Consequence	High Consequence
Life safety	Not likely to result in injuries or fatalities. No life safety issues.	Medical treatment may be required, but no fatalities are involved. Minor treatment or limited hospitalization may be required.	Extensive injuries occur and hospitalization is required. A fatality may be involved.	Many severe injuries requiring hospitalization have occurred. Multiple fatalities may be involved.
Evacuation	Not likely to result in an evacuation, a shelter-in-place order, or people stranded.	A small or localized portion of the population is evacuated, sheltered-in-place, or stranded.	A moderate and generally localized portion of the population is evacuated, sheltered-in-place, or stranded.	A large or widespread portion of the population is evacuated, sheltered-in-place, or stranded.
Psychosocial	Not likely to result in significant impacts on an individual's mental health and emotional well-being.	Moderate or generally short-term impacts on the mental health and emotional well-being of one or more people.	Significant and possibly long-term impacts on the mental health and emotional well-being of one or more people.	Widespread and possibly long-term impacts on the mental health and emotional well-being of the community.
Property damage	Not likely to result in property damage.	Could cause minor to moderate property damage.	Severe but localized property damage.	Widespread or severe damage to multiple properties.
Critical infrastructure	Not likely to disrupt assets or services.	Could cause a minor disruption of assets or services.	Could cause major but localized, short-term disruptions to critical infrastructure services.	Could cause widespread, severe, and ongoing disruptions of assets or services.
Environmental	Not likely to result in environmental damage.	Could cause localized but reversible environmental damage. A quick cleanup is possible.	Could cause major but reversible environmental damage. Clean-up efforts are difficult.	Could cause severe, irreversible environmental damage. Clean-up efforts are not possible.
Economic	Not likely to disrupt business or financial activities.	Could cause minor disruptions to businesses or financial activities. A minor disruption to the local economy is possible.	Could result in losses for one or more businesses. Could result in other negative consequences for the regional or local economy.	Could result in losses for an industry. Could cause severe economic impacts on the community or region.
Reputational	Not likely to result in significant legal, political, or reputational impacts.	Likely to result in limited or short-term legal, political, or reputational impacts.	Likely to result in significant or long-term legal, political, or reputational impacts.	Likely to result in significant or lasting legal, political, or reputational impacts.



The Loomex Group calculated consequence scores for this CRA by using the following weighting structure:

- High consequence: Score of 3
- Moderate consequence: Score of 2
- Low consequence: Score of 1
- No consequence: Score of 0

In the life safety category, The Loomex Group multiplied the consequence score by a factor of 3, making 9 the maximum score for this category. The heavier overall weighting for this category is due to the potential for severe life safety consequences during a front-line emergency response.

### 12.4 Total Risk Scoring

Each hazard’s overall risk level is calculated by multiplying its likelihood score by its consequence score.

After multiplying the likelihood and consequence scores, each risk is categorized by its total risk score (as defined in Table 44).

Table 42. Risk level categories used in the risk matrix.

Category	Total Score
Very Low	1 to 30
Low	31 to 60
Moderate	61 to 90
High	91 to 120
Very High	121 to 150
Extreme	151 to 180

### 12.5 Risks Identified in Perth

Table 45 presents the risk matrix for Perth. The table uses the methodology described above to calculate an overall risk score and risk level for each threat identified in the community.

Table 43. Risk matrix for Perth.

Risk	Likelihood Score (L)	Life Safety Consequence	Evacuation Consequence	Psychosocial Consequence	Property Damage Consequence	Critical Infrastructure Consequence	Environmental Consequence	Economic Consequence	Reputational Consequence	Consequence Score (C)	Risk Total (L x C)	Risk Level
Fire or explosion in industrial occupancy	5	9	3	3	3	2	3	3	3	29	145	Very High
Severe weather event	5	9	2	2	3	3	1	2	2	24	120	High
Fire in residential occupancy	6	9	2	2	2	1	1	1	1	19	114	High
Fire in downtown core	5	9	2	2	3	1	1	2	2	22	110	High
Rail incident	4	9	3	3	3	2	3	2	2	27	108	High
Road/highway incident	6	6	1	2	1	1	2	2	2	17	102	High
Flooding	5	3	2	2	3	2	1	1	2	16	80	Moderate
Hazardous materials incident	4	6	1	1	1	1	2	2	2	16	64	Moderate
Critical infrastructure failure	5	3	1	1	1	0	1	2	2	11	55	Low
Rescue incident	4	6	0	1	1	0	0	0	0	8	32	Low

## 13.0 Risk Treatment Plans

### 13.1 Overview of Risk Treatment Plans

The following RTPs address the fire and life safety risks identified in Perth. There is one RTP for each risk.

Each RTP begins by identifying which community profile is applicable to the risk under discussion. The RTP then presents administrative and operational observations about the risk and considers the following five questions:

1. What evidence is there to support the need for services that address this risk?
2. Does the current treatment meet the community's needs and expectations?
3. Is the community capable of delivering the required services?
4. Is there a way to make the community safer?
5. Are there any emerging risks Perth Fire Services cannot manage or is not managing?

Based on the answers to the five questions above, the RTP recommends at least one of the following actions to address the risk under discussion:

- Avoid: Eliminate the hazard.
- Mitigate: Reduce the likelihood or impact of the risk.
- Accept: Take no action.
- Transfer: Transfer the risk to another party.
- Share: Transfer part of the risk's ownership to another party.

All recommended actions include risk management strategies that consider topics such as:

- policies, procedures, and service levels
- training
- service delivery agreements
- resource allocation

The RTPs then list the resources and timelines needed to implement the risk management strategies.

Perth Fire Services should use the RTPs to guide the development of programs and services to lessen the impacts of the community's identified risks.

## 13.2 Fire or Explosion in an Industrial Occupancy

**Risk Level: Very High**

**Risk Score: 145**

### Applicable Community Profile

This risk was identified by the building stock profile, economic profile, and past loss and event history profile.

### Current Treatment, Capability, and Services Provided

- Perth Fire Services provides structural firefighting services.
- Perth Fire Services provides interior firefighting services.
- Perth Fire Services' personnel are trained to respond at the awareness level for incidents involving hazardous materials.
- Perth Fire Services has reviewed—and provided comments about—the emergency plan for the local propane facility.

### Administrative and Operational Risks, Concerns, and Observations

- Perth's building stock includes 64 industrial occupancies.
- Some of Perth's industrial occupancies are large buildings with heavy fire loads.
- Perth contains a tank farm that stores fuel for vehicles and furnace oil.
- Perth contains a propane storage facility that has two large propane tanks.
- Some of the industrial facilities in Perth are manufacturing plants that use and store various chemicals.
- An incident in a manufacturing plant can potentially result in mass casualties among workers in the facility.
- Perth has not formalized a fire prevention policy for Perth Fire Services.
- Perth has not formalized a fire safety inspection program for Perth Fire Services.
- Perth Fire Services' fire station is located close to the propane facility and the tank farm, which are factors that have the potential to affect an emergency response.
- Perth Fire Services has not completed the pre-incident planning process for all industrial occupancies in Perth.

## Determining Appropriate Fire Protection Services

### **What evidence is there to support the need for services that address this risk?**

Perth has experienced three industrial fires in the last five years. Those incidents resulted in a combined dollar loss of approximately \$15,000. Due to the number of industrial occupancies in Perth, further incidents are possible.

### **Does the current treatment meet the community's needs and expectations?**

The current treatment seems to meet the community's needs and expectations.

### **Is the community capable of delivering the required services?**

Perth Fire Services should have the capability to handle small-scale incidents. If an incident occurs that exceeds Perth Fire Services' resources or capabilities, it can request assistance through its mutual aid plans.

### **Is there a way to make the community safer?**

Perth can establish a formalized fire prevention policy. The town can base components of the policy (such as public education and code enforcement programs) on the three lines of defence.

Perth Fire Services can complete the pre-incident planning process for the industrial occupancies in Perth. Doing so will provide information that Perth Fire Services can use to enhance the safety of building occupants and fire crews during emergencies.

Perth Fire Services can undergo an operational assessment to determine the extent of its response capabilities. That assessment should take place as part of a proactive approach to managing the risk of a fire or explosion in an industrial occupancy in Perth.

### **Are there emerging risks that Perth Fire Services cannot manage or is not managing?**

Perth Fire Services inspects the industrial occupancies in Perth each time it receives a request or complaint. However, Perth Fire Services is not completing inspections on a regular basis. As a result, there may be unidentified or untreated risks at those sites.

## Recommended Risk Treatment Action and Strategy

### **Mitigate**

- Create a fire prevention policy and ensure it includes public education and code enforcement programs.
- Complete the pre-incident planning process for all high-risk industrial occupancies in Perth.

### **Resources Needed**

- Implementing this RTP will require Perth Fire Services' time and resources.

### **Timeline**

- Perth Fire Services should strive to implement this RTP within one year.

### 13.3 Severe Weather Event

**Risk Level: High**

**Risk Score: 120**

#### Applicable Community Profile

This risk was identified by the hazard profile.

#### Current Treatment, Capability, and Services Provided

- Perth Fire Services provides various services in response to several types of severe weather events, including high winds, snowstorms, and ice storms.

#### Administrative and Operational Risks, Concerns, and Observations

- A severe weather event can cause energy emergencies for some residences.
- A severe weather event may prevent residents and emergency responders from accessing certain areas of Perth.
- If a severe weather event causes a building collapse, Perth will need to activate its mutual aid agreement in order to receive the necessary response support.

#### Determining Appropriate Fire Protection Services

##### **What evidence is there to support the need for services that address this risk?**

Historically, Perth has experienced several types of severe weather events, including heavy rain, ice storms, and tornadoes.

##### **Does the current treatment meet the community's needs and expectations?**

The current treatment seems to meet the community's needs and expectations.

##### **Is the community capable of delivering the required services?**

Perth Fire Services should have the capability to deliver the required services for most incidents. However, certain large-scale incidents will exceed Perth Fire Services' capabilities. For example, if a tornado occurs, Perth Fire Services will need to request support through its mutual aid plans. Perth may also need to request assistance from the provincial government.

**Is there a way to make the community safer?**

Perth Fire Services can provide public education about what to do before, during, and after a severe weather event.

Perth Fire Services can provide public education about the importance of having an emergency preparedness kit.

**Are there emerging risks that Perth Fire Services cannot manage or is not managing?**

As of this CRA, there are no unmanaged emerging risks.

**Recommended Risk Treatment Action and Strategy**

**Mitigate**

- Provide public education about what to do before, during, and after a severe weather event.
- Provide public education about the importance of having an emergency preparedness kit.

**Resources Needed**

- Implementing this RTP will require Perth Fire Services' time and resources.

**Timeline**

- Perth Fire Services should strive to implement this RTP within two years.



### 13.4 Fire in Residential Occupancy

**Risk Level: High**

**Risk Score: 114**

#### Applicable Community Profile

This risk was identified by the demographic profile, building stock profile, economic profile, and past loss and event history profile.

#### Current Treatment, Capability, and Services Provided

- Perth Fire Services provides public education, code enforcement, and interior fire suppression services.

#### Administrative and Operational Risks, Concerns, and Observations

- Perth has not formalized a fire prevention policy for Perth Fire Services.
- Perth has not formalized a fire safety inspection program for Perth Fire Services.
- Perth Fire Services does not inspect Perth's multi-unit residential occupancies on a regular basis.
- Perth Fire Services may not have the capacity or resources to deliver a comprehensive fire prevention program that includes fire safety inspections.
- Perth contains 2,191 buildings that were constructed before the introduction of the OBC. That number represents 56 per cent of the building stock. Many of the older buildings are located in the town's downtown core.

#### Determining Appropriate Fire Protection Services

##### What evidence is there to support the need for services that address this risk?

Perth has experienced 14 residential fires in the last five years. Those incidents resulted in a combined dollar loss of approximately \$1,886,600.

##### Does the current treatment meet the community's needs and expectations?

The current treatment seems to meet the community's needs and expectations.

##### Is the community capable of delivering the required services?

Perth Fire Services should have the capability to deliver the required services. If an incident occurs that exceeds Perth Fire Services' resources or capabilities, it can request assistance through its mutual aid plans.

### **Is there a way to make the community safer?**

Perth can establish a formalized fire prevention policy. The town can base components of the policy (such as public education and code enforcement programs) on the three lines of defence.

Perth Fire Services can begin inspecting Perth's multi-unit residential occupancies on a regular basis. Perth Fire Services can also enhance the public education and code enforcement activities it conducts for those occupancies.

Perth Fire Services can ensure that its personnel are trained to provide the level of service that Council has set for them, such as the provision of high-rise and low-rise training.

Perth Fire Services can undergo an operational assessment to determine the extent of its response capabilities. That assessment should take place as part of a proactive approach to managing the risk of a fire in a residential occupancy in Perth.

Perth Fire Services can complete the pre-incident planning process for the residential occupancies in Perth. Doing so will provide information that Perth Fire Services can use to enhance the safety of building occupants and fire crews during emergencies.

### **Are there emerging risks that Perth Fire Services cannot manage or is not managing?**

Perth Fire Services inspects the residential occupancies in Perth each time it receives a request or complaint. However, Perth Fire Services is not completing inspections on a regular basis. As a result, there may be unidentified or untreated risks at those sites.

## **Recommended Risk Treatment Action and Strategy**

### **Mitigate**

- Create a fire prevention policy and ensure it includes public education and code enforcement programs.
- Ensure Perth Fire Services' personnel complete ongoing training to maintain the skills needed to deliver the services Council has set for them.
- Complete the pre-incident planning process for the residential occupancies in Perth.

## **Resources Needed**

- Implementing this RTP will require Perth Fire Services' time and resources.

## **Timeline**

- Perth Fire Services should strive to implement this RTP within one year.

### 13.5 Fire in Downtown Core

**Risk Level: High**

**Risk Score: 110**

#### Applicable Community Profile

This risk was identified by the building stock profile and the economic profile.

#### Current Treatment, Capability, and Services Provided

- Perth Fire Services provides public education, code enforcement, and interior fire suppression services.

#### Administrative and Operational Risks, Concerns, and Observations

- Perth has not formalized a fire prevention policy for Perth Fire Services.
- Perth has not formalized a fire safety inspection program for Perth Fire Services.
- Perth Fire Services may not have the capacity or resources to deliver a comprehensive fire prevention program that includes fire safety inspections.
- There are several outstanding inspection notices related to this risk.
- Building owners (or occupants) may not be taking steps to maintain the life safety systems in their buildings.
- Many buildings in the downtown core were constructed prior to the introduction of the OBC.

#### Determining Appropriate Fire Protection Services

##### **What evidence is there to support the need for services that address this risk?**

Perth experiences fires in its downtown core each year.

In 2001, a fatality occurred due to a fire in Perth's downtown core.

##### **Does the current treatment meet the community's needs and expectations?**

The current treatment seems to meet the community's needs and expectations.

##### **Is the community capable of delivering the required services?**

Perth Fire Services should have the capability to deliver the required services. If an incident occurs that exceeds Perth Fire Services' resources or capabilities, it can request assistance through its mutual aid plans.

### **Is there a way to make the community safer?**

Perth can establish a formalized fire prevention policy. The town can base components of the policy (such as public education and code enforcement programs) on the three lines of defence.

Perth Fire Services can begin inspecting the occupancies in Perth's downtown core on a regular basis, especially the mixed occupancies. Perth Fire Services can also enhance the public education and code enforcement activities it conducts for those occupancies.

Perth Fire Services can ensure that its personnel are trained to provide the level of service that Council has set for them.

Perth Fire Services can undergo an operational assessment to determine the extent of its response capabilities. That assessment should take place as part of a proactive approach to managing the risk of a fire in Perth's downtown core.

### **Are there emerging risks that Perth Fire Services cannot manage or is not managing?**

Perth Fire Services inspects the occupancies in Perth's downtown core each time it receives a request or complaint. However, Perth Fire Services is not completing inspections on a regular basis. As a result, there may be unidentified or untreated risks at those sites.

## **Recommended Risk Treatment Action and Strategy**

### **Mitigate**

- Create a fire prevention policy and ensure it includes public education and code enforcement programs.
- Inspect the occupancies in Perth's downtown core on a regular basis.

## **Resources Needed**

- Implementing this RTP will require Perth Fire Services' time and resources.

## **Timeline**

- Perth Fire Services should strive to implement this RTP within one year.

## 13.6 Rail Incident

**Risk Level: 108**

**Risk Score: High**

### Applicable Community Profile

This risk was identified by the geographic profile, critical infrastructure profile, and hazard profile.

### Current Treatment, Capability, and Services Provided

- Perth Fire Services can provide fire suppression services if the incident does not involve hazardous materials.
- Perth Fire Services can only provide a hazardous materials response at the awareness level.

### Administrative and Operational Risks, Concerns, and Observations

- Perth and Smiths Falls District Hospital is beside the rail line. If a derailment occurs, Perth Fire Services may face challenges evacuating staff and patients.
- A rail incident may lead to the closure of Highway 7, which could cause traffic issues in Perth.
- Some rail incidents have the potential to cause long-term environmental impacts.
- A train derailment or stoppage may restrict access to the northern part of Perth, which contains a large business area.
- There are two vulnerable occupancies in the Township of Tay Valley that are close to rail lines. Those occupancies are located near Perth's southwestern border.

### Determining Appropriate Fire Protection Services

#### **What evidence is there to support the need for services that address this risk?**

In recent years, Perth has experienced one significant train incident, as well as several fires along the train tracks that run through the town.

#### **Does the current treatment meet the community's needs and expectations?**

The current treatment seems to meet the community's needs and expectations.

**Is the community capable of delivering the required services?**

If a train derailment occurs, Perth Fire Services will expect CPKC to assist with response efforts and lead clean-up efforts (as required). If a large-scale incident occurs, Perth Fire Services can request additional assistance through its mutual aid plans.

**Is there a way to make the community safer?**

Perth can work with CPKC to discuss building an overpass to provide access to the town's northern area.

CPKC can help train Perth Fire Services' personnel to identify train cargo and respond to train derailments.

**Are there emerging risks that Perth Fire Services cannot manage or is not managing?**

Perth Fire Services does not provide hazardous material response at an operations level. New residential developments and industrial lands are also on the north side of the CP rail line.

**Recommended Risk Treatment Action and Strategy**

**Mitigate**

- Ensure Perth Fire Services' personnel complete training about rail incidents.

**Share**

- Work with CPKC to build an overpass that will provide Perth Fire Services with access to the northern part of Perth.

**Resources Needed**

- Providing training will require Perth Fire Services' time and resources.
- Building an overpass will require a significant investment from CPKC.

**Timeline**

- Ongoing: Perth Fire Services should provide rail incident training as part of its regular operations.

### 13.7 Road/Highway Incident

**Risk Level: High**

**Risk Score: 102**

#### Applicable Community Profile

This risk was identified by the geographic profile and the hazard profile.

#### Current Treatment, Capability, and Services Provided

- Perth Fire Services responds to road/highway incidents and provides accident response, fire suppression, and rescue services (as required).
- Perth has an automatic aid agreement with Lanark County regarding auto extrication services.

#### Administrative and Operational Risks, Concerns, and Observations

- There is a high volume of traffic on Highway 7.
- Some vehicles travelling in and through Perth carry unknown cargo, which may include hazardous materials.
- If Perth activates its automatic aid agreement, it may take time for the responding fire department/agencies to arrive at the emergency site.

#### Determining Appropriate Fire Protection Services

##### **What evidence is there to support the need for services that address this risk?**

Perth Fire Services responds to several road/highway incidents annually.

##### **Does the current treatment meet the community's needs and expectations?**

The current treatment seems to meet the community's needs and expectations.

##### **Is the community capable of delivering the required services?**

Perth Fire Services should have the capability to deliver the required services.

If an incident occurs that exceeds Perth Fire Services' resources or capabilities, it can request assistance through its automatic aid agreement with Lanark County.

**Is there a way to make the community safer?**

Perth should contact the authority with jurisdiction over the town’s roads and request that the agency hire an engineer to review the road network and identify high-collision areas. Doing so may provide information that Perth and Perth Fire Services can use to reduce the potential of accidents occurring in those areas.

Perth Fire Services can continue reviewing its training program to make sure it remains current with the services needed for responses to road/highway incidents.

**Are there emerging risks that Perth Fire Services cannot manage or is not managing?**

As of this CRA, there are no unmanaged emerging risks.

**Recommended Risk Treatment Action and Strategy**

**Transfer**

- Contact the authority with jurisdiction over the road network in Perth and request that the agency hire an engineer to review the town’s roads and identify high-collision areas.

**Resources Needed**

- To implement this RTP, the authority with jurisdiction over Perth’s roads will need to hire an engineer.

**Timeline**

- Perth should strive to implement this RTP within one to two years.



## 13.8 Flooding

**Risk Level: Moderate**

**Risk Score: 80**

### Applicable Community Profile

This risk was identified by the geographic profile, critical infrastructure profile, and hazard profile.

### Current Treatment, Capability, and Services Provided

- If flooding occurs, Perth Fire Services may be called upon to protect or rescue residents.
- If flooding occurs, Perth Fire Services may be called upon to provide a safety zone in the affected areas.
- The Ministry of Natural Resources and Forestry and the Rideau Valley Conservation Authority may respond to incidents of flooding in Perth (under specific circumstances).
- Perth Fire Services can provide incident management support until the proper response authority arrives at the scene of a flood.

### Administrative and Operational Risks, Concerns, and Observations

- Because Perth Fire Services' firefighters do not receive flood response training, it should contact its external partners to confirm the level of support they can provide if Perth experiences a flood. Knowing that information can help Perth and Perth Fire Services arrange appropriate flood response support.
- It is possible that not all residents living in a floodplain understand how to prepare for a flood or what to do after a flood occurs.

### Determining Appropriate Fire Protection Services

#### **What evidence is there to support the need for services that address this risk?**

According to Perth's HIRA, the town experiences localized flooding every year.

#### **Does the current treatment meet the community's needs and expectations?**

The current treatment seems to meet the community's needs and expectations.

### **Is the community capable of delivering the required services?**

Based on available evidence, Perth Fire Services can provide the required services. However, due to inconsistent records management, there may be unidentified gaps in Perth Fire Services' capabilities or level of service. Going forward, Perth Fire Services must strive to maintain consistent records in order to have proof that it has the ability to meet the community's needs.

In addition, Perth Fire Services may require assistance from external agencies to respond to a flooding incident.

### **Is there a way to make the community safer?**

Perth Fire Services, Perth's emergency management program committee, and the Rideau Valley Conservation Authority can provide public education about preparing for a flood. Public education initiatives can also address what to do after a flood occurs.

Perth Fire Services can provide its firefighters with flood response training that aligns with Perth Fire Services' level of service.

### **Are there emerging risks that Perth Fire Services cannot manage or is not managing?**

As of this CRA, there are no unmanaged emerging risks.

## **Recommended Risk Treatment Action and Strategy**

### **Mitigate**

- Provide Perth's firefighters with flood response training that aligns with Perth Fire Services' level of service.

### **Share**

- Work with Perth's emergency management program committee and the Rideau Valley Conservation Authority to provide public education about how to prepare for a flood. The public education should also address what to do after a flood occurs.

## **Resources Needed**

- Implementing this RTP will require Perth Fire Services' time and resources.

## **Timeline**

- Perth Fire Services should strive to implement this RTP within one year.

### 13.9 Hazardous Materials Incident

**Risk Level: Moderate**

**Risk Score: 64**

#### Applicable Community Profile

This risk was identified by the hazard profile.

#### Current Treatment, Capability, and Services Provided

- Perth Fire Services is trained to respond at the awareness level for incidents involving hazardous materials.
- If a hazardous materials incident occurs, Perth Fire Services is responsible for contacting the applicable response agency and then providing incident command until representatives of that agency arrive at the emergency scene.

#### Administrative and Operational Risks, Concerns, and Observations

- It may take a considerable amount of time for external response agencies to arrive at an emergency site.
- Perth's E&R bylaw states that Perth Fire Services responds to hazardous materials incidents at the awareness level.
- Perth Fire Services has not completed the pre-incident planning process for all sites in Perth where an incident involving hazardous materials may occur.

#### Determining Appropriate Fire Protection Services

##### **What evidence is there to support the need for services that address this risk?**

Perth has experienced several hazardous material incidents in the past. Due to the types of industrial occupancies in the town, there is the potential that future hazardous material incidents will occur.

##### **Does the current treatment meet the community's needs and expectations?**

As of this CRA, there are no unmanaged emerging risks.

##### **Is the community capable of delivering the required services?**

Perth Fire Services does not have the training or equipment to provide rescue or clean-up services for any incidents involving hazardous materials. This lack is due to the costs involved with maintaining a hazardous materials response team.

**Is there a way to make the community safer?**

Perth Fire Services can complete the pre-incident planning process for all occupancies in Perth where a hazardous materials incident has the potential to occur. Doing so will provide information that Perth Fire Services can use to enhance the safety of building occupants and fire crews during emergencies.

Perth Fire Services can review the safety plans in place at industrial occupancies and take note of the established emergency response protocols.

**Are there emerging risks that Perth Fire Services cannot manage or is not managing?**

Perth Fire Services inspects various occupancies in Perth upon request or complaint. However, Perth Fire Services is not completing inspections on a regular basis. As a result, there may be unidentified or untreated risks at occupancies that house hazardous materials.

**Recommended Risk Treatment Action and Strategy**

**Mitigate**

- Inspect the industrial occupancies in Perth on a regular basis.
- Complete the pre-incident planning process for all occupancies in Perth where a hazardous materials incident has the potential to occur.

**Resources Needed**

- Implementing this RTP will require Perth Fire Services' time and resources.

**Timeline**

- Perth Fire Services should strive to implement this RTP within one year.

### 13.10 Critical Infrastructure Failure

**Risk Level: Low**

**Risk Score: 55**

#### Applicable Community Profile

This risk was identified by the critical infrastructure profile.

#### Current Treatment, Capability, and Services Provided

- Perth Fire Services has the capability to respond to some types of CI failures, such as downed hydro lines and natural gas line breaks.
- Perth Fire Services can provide a safety zone until the proper authorities arrive to isolate or repair the damaged CI.

#### Administrative and Operational Risks, Concerns, and Observations

- It may take time for the proper repair authorities to arrive at the scene of a CI failure.
- Some CI failures have the potential to cause lengthy power outages or service disruptions, which can severely affect Perth's public services and vulnerable occupancies.

#### Determining Appropriate Fire Protection Services

##### **What evidence is there to support the need for services that address this risk?**

Perth has experienced several types of CI failures in the past, including issues with the town's hydro, natural gas, and water mains systems.

##### **Does the current treatment meet the community's needs and expectations?**

The current treatment seems to meet the community's needs and expectations.

##### **Is the community capable of delivering the required services?**

Perth Fire Services should have the capability to provide the services it is expected to deliver.

##### **Is there a way to make the community safer?**

Perth Fire Services can ensure that its personnel receive training to recognize the risks involved with CI failure.

Perth Fire Services can ensure that its personnel receive training to recognize what actions to take when responding to CI failures.

Perth Fire Services can provide public education about the importance of having an emergency preparedness kit.

**Are there emerging risks that Perth Fire Services cannot manage or is not managing?**

As of this CRA, there are no unmanaged emerging risks.

**Recommended Risk Treatment Action and Strategy**

**Mitigate**

- Ensure Perth Fire Services' personnel complete applicable ongoing training regarding CI failures.
- Provide public education about the importance of having an emergency preparedness kit.

**Accept**

- Continue monitoring for events or issues that could lead to a critical infrastructure failure.

**Resources Needed**

- Implementing this RTP will require Perth Fire Services' time and resources.

**Timeline**

- Ongoing: Perth Fire Services should incorporate this RTP into its regular operations.

### 13.11 Rescue Incident

**Risk Level: Low**

**Risk Score: 32**

#### Applicable Community Profile

This risk was identified by the hazard profile.

#### Current Treatment, Capability, and Services Provided

- Perth Fire Services responds to industrial accidents.
- Perth Fire Services provides water and ice rescue services.

#### Administrative and Operational Risks, Concerns, and Observations

- The terms of Perth's E&R bylaw do not address response expectations in regard to industrial accidents that involve extrication.

#### Determining Appropriate Fire Protection Services

##### **What evidence is there to support the need for services that address this risk?**

Perth Fire Services responds to several types of emergencies that require the provision of specialized rescue services (such as water/ice rescue services, industrial rescue services, and machinery rescue services).

##### **Does the current treatment meet the community's needs and expectations?**

As of this CRA, there are no unmanaged emerging risks.

##### **Is the community capable of delivering the required services?**

Perth Fire Services should have the capability to provide the services it is expected to deliver.

##### **Is there a way to make the community safer?**

Perth Fire Services can review all relevant chapters of NFPA 1006 to ensure it adheres to the terms of the Ministry of Labour's firefighter guidance notes.

Perth Fire Services can assess its rescue capabilities and the equipment it uses to perform rescues. Following this assessment, Perth Fire Services should determine whether it needs to establish any agreements with neighbouring fire departments to enhance its rescue services.

Perth Fire Services can enhance the water/ice rescue training its personnel receive.

**Are there emerging risks that Perth Fire Services cannot manage or is not managing?**

As of this CRA, there are no unmanaged emerging risks.

**Recommended Risk Treatment Action and Strategy**

**Mitigate**

- Continue to increase the amount of water/ice rescue training Perth Fire Services' personnel receive.
- Assess Perth Fire Services' rescue capabilities and the equipment it uses to perform rescues. Following this assessment, determine whether agreements with neighbouring fire departments could enhance rescue services in Perth.

**Share**

- Consider establishing an automatic aid agreement with a neighbouring fire department that could provide rescue services.

**Resources Needed**

- Implementing this RTP will require Perth Fire Services' time and resources.

**Timeline**

- Ongoing: Perth Fire Services should incorporate this RTP into its regular operations.



## Appendix A: Resources

This community risk assessment is based in part on information from the following legislation and documents:

- Fire Protection and Prevention Act, 1997
- Ontario Fire Marshal Technical Guideline 02-2019
- Ontario Regulation 213/07: Fire Code
- Ontario Regulation 378/18: Community Risk Assessment
- Statistics Canada 2016 Census Profile
- Statistics Canada 2021 Census Profile
- Town of Perth Community Profile
- Town of Perth Hazard Identification and Risk Assessment Workbook

Perth Fire Services also assisted with the development of this document by contributing data and reviewing applicable information (as required).

## Appendix B: List of Abbreviations

This community risk assessment uses the following acronyms and abbreviations:

**CI:** critical infrastructure

**Council:** Municipal Council of Perth

**CRA:** community risk assessment

**E&R bylaw:** establishing and regulating bylaw

**EMO:** Emergency Management Ontario

**EOC:** emergency operations centre

**FPPA:** Fire Prevention and Protection Act

**HIRA:** hazard identification and risk assessment

**LWC:** lightweight construction systems

**OBC:** Ontario Building Code

**OFC:** Ontario Fire Code

**OFM:** Ontario Fire Marshal

**RTP:** risk treatment plan

## Appendix C: Glossary of Terms

There are varying definitions for the terms used in risk assessments and risk management. This community risk assessment uses the following definitions from Emergency Management Ontario's glossary of terms:

**Assessment:** The evaluation and interpretation of available data as a basis for decision-making.

**Catastrophe:** An emergency of particularly severe proportions.

**Community:** A generic term that refers to municipalities and First Nations communities.

**Consequence:** A result or effect of an action or condition that is expressed qualitatively or quantitatively. A consequence can manifest as a loss, injury, or disadvantage.

**Critical infrastructure:** The infrastructure that contributes to the interconnected networks, services, and systems that meet vital human needs, sustain the economy, and protect public safety and security.

**Hazard:** A phenomenon, substance, human activity, or condition that may cause a loss of life, an injury, or other health impacts. A hazard can also result in property damage, service loss, social and economic disruptions, and environmental damage. Hazards can be natural, technological, or human-caused, or some combination of these.

**Hazardous material:** A substance (gas, liquid, or solid) capable of causing harm to people, property, the environment, the economy, or services. Materials with toxic, flammable, or explosive properties are considered hazardous.

**Mitigation:** Actions taken to reduce the adverse impacts of an emergency or disaster. Such actions may include diversion or containment measures to lessen the impacts of a flood or a spill.

**Probability:** The likelihood of an event occurring that may result in an emergency, disaster, or service disruption.

**Public education program:** A program that provides focused information to a target audience to educate about protective actions to reduce the risk of life and property damage in an emergency.

**Risk:** The product of the probability of the occurrence of a hazard and its consequences.

**Risk assessment:** A process used to identify and evaluate potential risks by analyzing specific hazards and estimating the likelihood and consequences of their occurrence.

## Appendix D: Fire Marshal Directive 2022 – 001

### **TOPIC: Use of Information on Lightweight Construction to Inform Fire Suppression Pre-Planning Activities**

This directive is issued under the provisions of the *Fire Protection and Prevention Act, 1997*, (FPPA) S.O. 1997, chapter 4, clause 9.(1)(b). It is the responsibility of every assistant to the Fire Marshal to follow the Fire Marshal's directive as set out in subsection 11.(1) of the FPPA. Further, under clause 9.(2)(b) of the FPPA, the Fire Marshal has the duty to advise municipalities in the interpretation and enforcement of this Act and the regulations.

#### **Background**

It has been well established that buildings constructed with truss and lightweight construction systems<sup>i</sup> (commonly referred to as lightweight construction) may be susceptible to pre-mature failure and rapid collapse under certain fire conditions, and thereby pose a risk to responding fire crews. Given this risk, it is important for responding fire departments to be aware of the presence of lightweight construction buildings to inform delivery of fire suppression service and protect the safety of firefighters.

Following the tragic passing of two volunteer firefighters, Ken Rea and Ray Walter, who were killed while battling a fire in Listowel when the roof of the building they were inside collapsed, the focus is to provide firefighters with the necessary information about a building's structural composition to safely plan fire suppression activities and help ensure their safety.

Building stock profile, including any building-related risks known to the fire department, must be considered in the development of Community Risk Assessment required under O. Reg. 378/18 - Community Risk Assessments (CRA)<sup>ii</sup>.

Identifying the presence of lightweight construction where it is known to exist in a community's building stock is required<sup>iii</sup> by Worksheet #2 "Building Stock Profile" included in Appendix A of Office of the Fire Marshal technical guideline TG-02-2019 (as revised on February 25, 2022). Where this information is used to inform fire suppression pre-planning activities, the goal of providing firefighters with necessary information to help ensure their safety is met.

#### **Directive**

Those assistants to the Fire Marshal, as identified in clause 11.(1)(a) of the FPPA (the fire chief of every department), are directed to:

- Ensure that information on the presence of truss and lightweight construction systems (lightweight construction) in a community's building stock, that is known

and documented in the Community Risk Assessment, is used to inform fire suppression pre-planning activities conducted within the community:

- by the local fire department; and
- by other municipalities providing fire suppression services through fire protection agreements.

Those assistants to the Fire Marshal, as identified in clause 11.(1)(b) of the FPPA (the clerk of every municipality that does not have a fire department) are directed to:

- Ensure that information on the presence of truss and lightweight construction systems (lightweight construction) in the community's building stock, that is known and documented in the Community Risk Assessment, is provided to those fire departments who provide fire protection services to the community, to inform their fire suppression pre-planning activities.

## Rationale

As truss and lightweight construction systems may be susceptible to pre-mature failure and rapid collapse under certain fire conditions, and pose a risk to responding fire crews, information pertaining to the presence of lightweight construction that is known and documented in a Community Risk Assessment must be used to inform pre-planning activities so that firefighters responding to a fire emergency may appropriately plan their fire response strategy.

Jon Pegg  
Ontario Fire Marshal  
February 25, 2022

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<sup>i</sup> Buildings constructed using:

- i. lightweight pre-engineered floor or roof systems containing lightweight elements such as wood I-joists, cold formed steel joists, wood truss assemblies with metal or wood plates and metal web wood joists; or
- ii. lightweight floor or roof systems containing solid sawn lumber joist less than 38 mm by 235 mm.

<sup>ii</sup> The CRA 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.

<sup>iii</sup> Section 2.(3) of the regulation requires that a CRA be in the form, if any, that the Fire Marshal provides or approves. The minimum expected level of information and detail that must be considered with respect to each of the mandatory profiles is outlined in Worksheets 1-9 included in Appendix A of TG-02-2019. While different styles and formats of the worksheets may be used, the information that is collected and considered for each profile must at minimum include the information outlined in the Appendix A worksheets.

## Appendix E: Accessible Data from Figures

For accessibility purposes, this appendix presents the data from figures 1 and 2 as tables.

Table 44. Data from figure 1.

Risk	Risk Score	Risk Level
Fire/explosion in industrial occupancy	145	Very High
Severe weather event	120	High
Fire in residential occupancy	114	High
Fire in downtown core	110	High
Rail emergency	108	High
Road/highway incident	102	High
Flooding	80	Moderate
Critical infrastructure failure	55	Low
Hazardous materials incident	48	Low
Rescue	32	Low

Table 45. Data from figure 2.

Risk	Risk Score
False fire calls	43.60%
Pre-fire conditions	12.58%
Other assistance calls	11.24%
Public hazards	9.44%
Rescues	8.76%
CO calls	4.04%
Property fires	4.72%
Open air burning	3.15%
Medical responses	2.47%