



TOWNSHIP OF
McNab/Braeside

Community Risk Assessment

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Prepared by:

THE **LOOMEX** GROUP

Township of McNab/Braeside Community Risk Assessment

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Land Acknowledgement

The Township of McNab/Braeside has provided the following land acknowledgement:

“We acknowledge that we are on the unceded territory of the Algonquin Anishinaabe Peoples.”

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 Township of McNab/Braeside should review the document annually. The township should also consider completing a new community risk assessment if its circumstances change significantly.

As per O. Reg. 378/18, a municipality (or its fire department) 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 fall 2023, the Township of McNab/Braeside contracted The Loomex Group to develop a community risk assessment (“**CRA**”).

The CRA project had the following objectives:

- Ensure McNab/Braeside complies with O. Reg. 378/18, which requires every municipality in Ontario to complete a CRA by July 1, 2024.
- Identify and examine McNab/Braeside’s public safety risks from a fire services perspective.
- Recommend strategies that McNab/Braeside and the McNab/Braeside Fire Department (“**the Department**”) can use to mitigate the township’s public safety risks.

Process

According to O. Reg. 378/18, there are nine community profiles that must be reviewed when developing a CRA. The Loomex Group completed those reviews by collecting various statistics about McNab/Braeside and then evaluating that information as per the instructions provided by the Ontario Fire Marshal (“**OFM**”) as part of OFM-TG-02-2019.

In addition to reviewing statistics, The Loomex Group conducted site visits and met with stakeholders from McNab/Braeside in order to gain first-hand insights into the township’s current and potential public safety risks.

Finally, The Loomex Group used a risk assessment tool to calculate the severity of each public safety risk it identified in McNab/Braeside. The Loomex Group then evaluated the administrative and operational concerns associated with each threat.

Findings

This CRA identifies and examines nine public safety risks in McNab/Braeside that are real and measurable threats. Each risk is applicable to at least one of the nine community profiles reviewed during the CRA’s development, and some risks are applicable to more than one profile.

Figure 1 illustrates the public safety risks identified in McNab/Braeside, ranked in order of their severity.

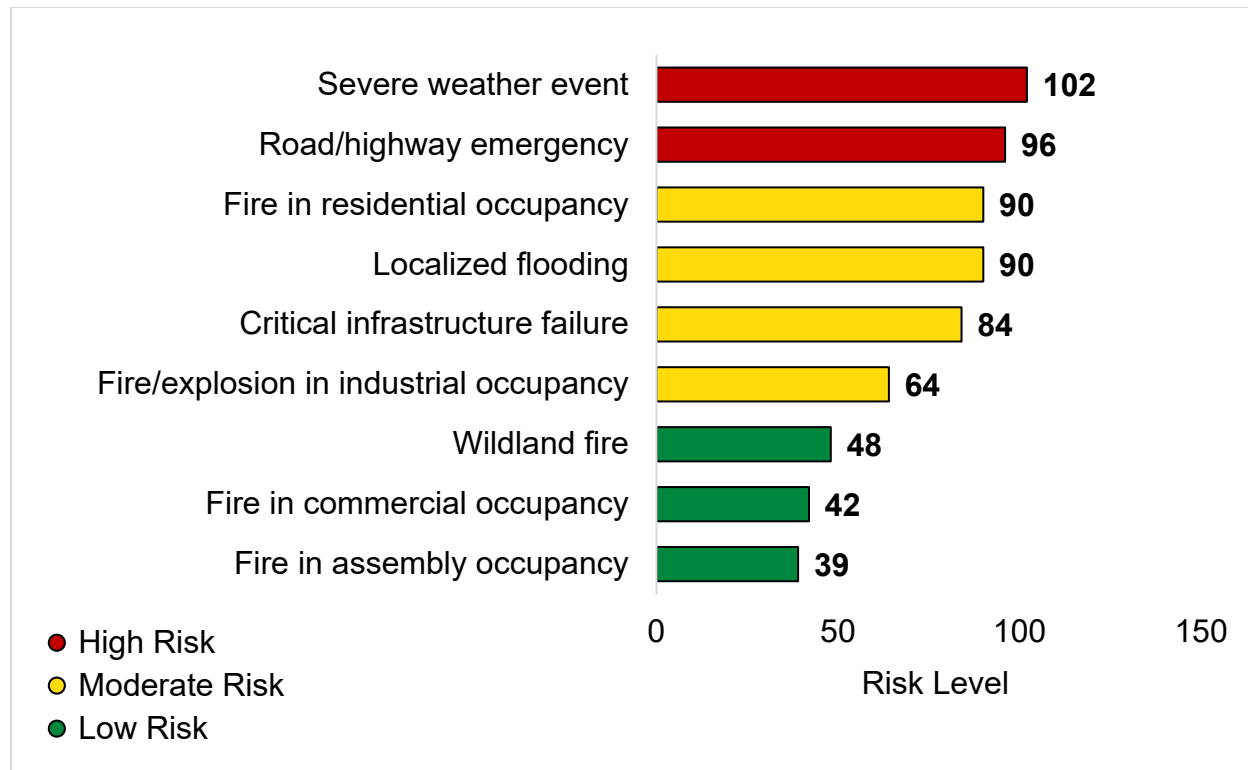


Figure 1. Public safety risks identified in McNab/Braeside.

In addition to the nine risks, this CRA provides information about other concerns in McNab/Braeside 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) under the heading of “Potential Concerns.” It is important for McNab/Braeside and the Department to familiarize themselves with all concerns noted in this CRA, as they include possible threats and issues that may intensify the danger of the township’s identified public safety risks

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 McNab/Braeside.

Each RTP includes:

- a summary of the Department’s current risk treatment measures and capabilities
- a summary of applicable administrative and operational concerns
- an overview of historical statistics about the risk and its impacts on the local community
- a consideration of the risk’s potential future impacts on the community
- a recommended strategy to address the concerns associated with the risk

The Loomex Group based the strategies in the RTPs on the concept of the three lines of defence. The three lines of defence is a fire safety model that recommends using proactive fire prevention initiatives to help reduce the need for fire suppression services. The OFM endorses the three lines of defence model, and 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, the Council of the Township of McNab/Braeside (“**Council**”) and the Department should review the RTPs in this CRA and discuss implementing the recommended strategies into their operations.

1.0 Introduction

1.1 Community Risk Assessments: Context

On July 1, 2019, the Province of Ontario issued O. Reg. 378/18. According to O. Reg. 378/18, all Ontario municipalities must complete a CRA by July 1, 2024.

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 should strive 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. In order to help a municipality avoid potential consequences, a CRA recommends strategies and resources that the local fire department can use to implement effective risk mitigation measures.

1.2 Approach and Methodology

1.2.1 Guiding Principle

All recommendations in this CRA are based on the fire safety model called the three lines of defence:

1. **Public education and prevention:** Fire departments need to create programs that teach community members how to safeguard their lives and property. Typically, the programs should involve spreading awareness about the importance of fire safety and prevention measures.
2. **Fire safety standards and code enforcement:** Fire departments should establish programs that ensure all community buildings comply with the Ontario Fire Code (“**OFC**”). The programs also provide fire departments with a way to confirm whether applicable buildings are maintaining necessary life safety systems to protect against fire hazards.
3. **Emergency response:** Fire departments require firefighters with the training, knowledge, and skills needed to save lives, prevent injuries, and stop fires from spreading.

The goal of the three lines of defence is to encourage a proactive approach to community fire safety. Because emergency responses are required after an incident occurs, it is important to focus on the first two components of the three lines of defence before an emergency response becomes necessary. 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 the three lines of defence also aligns with the requirements of the Fire Protection and Prevention Act (“**FPPA**”).

1.2.2 Data Collection Process

The content of this CRA is based on the findings of document reviews, site visits, and stakeholder engagement sessions.

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

1.2.3 Document Development Process

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

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

This CRA contains summaries of each community profile as they pertain to McNab/Braeside. The findings discussed in this document are based on statistics obtained from various reports and historical records, as well as insights provided by stakeholders from the township.

The structure and focus of the community profiles discussed in this CRA adhere to the instructions contained in the worksheets that form part of OFM-TG-02-2019.

1.2.4 Likelihood Levels, Consequence Levels, and Risk Level Matrix

After identifying the public safety risks in McNab/Braeside, The Loomex Group determined the likelihood and consequence level of each threat.

The Loomex Group determined the likelihood and consequence levels of the identified public safety risks by using evaluation criteria developed by the OFM. A summary of the evaluation criteria is provided below.

Likelihood Levels

Table 1 shows how the OFM classifies risk likelihood levels.

Table 1. OFM definitions of risk likelihood levels.

Likelihood Level	Specifics
Rare	• An incident may occur in exceptional circumstances. • No incidents have occurred in the past 15 years.
Unlikely	• An incident could occur at some time if circumstances significantly change. • It has been five to 15 years since the last incident.
Possible	• An incident might occur under current circumstances. • There has been one incident in the past five years.
Likely	• An incident will probably occur at some time under current circumstances. • There have been multiple or recurring incidents in the past five years.
Almost certain	• An incident is expected to occur in most situations unless circumstances change. • There have been multiple or recurring incidents in the past year.

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.

Consequence Levels

Table 2 shows how the OFM classifies risk consequence levels.

Table 2. OFM definitions of risk consequence levels.

Consequence Level	Specifics
Insignificant	• There is no life safety issue. • Limited value or no property loss. • No impact on the local economy. • No effect on general living conditions.
Minor	• There is a potential risk to the life safety of residents. • Minor property loss. • Minimal disruption to business activity. • Minimal impact on general living conditions.
Moderate	• There is a real threat to the life and safety of residents. • Moderate property loss. • Poses a threat to small local businesses. • Could pose a threat to the quality of the environment.
Major	• There is the potential for a massive loss of life. • Significant property damage. • Significant threat to large businesses, local economy, and tourism. • Environmental impact resulting in a short-term, partial evacuation of residents and businesses.
Catastrophic	• There is the potential for a significant loss of life. • Property damage to a significant portion of the community. • Long-term disruption of businesses, local employment, and tourism. • Environmental damage resulting in the long-term evacuation of residents and businesses.

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.

Risk Level Matrix

After risk likelihood and consequence levels are identified, they are combined using a risk level matrix in order to calculate overall risk levels.

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

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	Moderate risk	Moderate risk	High risk	High risk	High risk
Likely	Moderate risk	Moderate risk	Moderate risk	High risk	High risk
Possible	Low risk	Moderate risk	Moderate risk	Moderate risk	High risk
Unlikely	Low risk	Low risk	Moderate risk	Moderate risk	Moderate risk
Rare	Low risk	Low risk	Low risk	Moderate risk	Moderate risk

2.0 Overview of the Local Community, Fire Department, and Bylaws

2.1 Overview of the McNab/Braeside Community

McNab/Braeside is an Eastern Ontario township in Renfrew County located on the south shore of the Ottawa River. The Madawaska River also passes through the town.

McNab/Braeside came into existence on January 1, 1998, when the Village of Braeside amalgamated with McNab Township. McNab/Braeside comprises the following communities:

- Braeside
- Burnstown
- Clay Bank
- Clay Valley
- Dewars
- Glasgow Station
- Goshen, Lochwinnoch (partially)
- Lundys Corners
- Pine Grove
- Sand Point
- Stewartville
- Rhoddy's Bay
- Waba
- White Lake

According to McNab/Braeside's official website, the township "offers a rural lifestyle along with cultural amenities. Made up of quaint villages and hamlets, residents and visitors alike enjoy all that the township's natural landscape has to offer — from swimming, boating, fishing, rowing, canoeing/kayaking in the summer, to snowmobiling, ice fishing and skiing in the winter — as well as close proximity to small-town shops and big-city attractions."¹

The motto of McNab/Braeside is "Where nature awaits".

¹ <http://www.mcnabbraeside.com/live-here>

2.2 Overview of the McNab/Braeside Fire Department

2.2.1 Structure

The McNab/Braeside Fire Department is a composite fire department that provides fire suppression, code enforcement, and public education services for the residents, businesses, and visitors of McNab/Braeside.

2.2.2 Personnel

The Department consists of the following personnel:

- 1 full-time Fire Chief
- 1 paid on-call/volunteer Training Officer
- 1 paid on-call/volunteer Safety Officer
- 3 paid on-call/volunteer district chiefs
- 3 paid on-call/volunteer captains
- 3 paid on-call/volunteer lieutenants
- 45 paid on-call/volunteer firefighters

2.2.3 Fire Stations

The Department currently operates three fire stations:

Fire Station 1 – Glasgow Station

2494 Russett Drive
Arnprior, ON
K7S 3G8

Fire Station 2 – White Lake

142 Burnstown Road
White Lake, ON
K0A 3L0

Fire Station 3 – Braeside

912 Centre Street
Braeside, ON
K0A 1G0

2.2.4 Fire Protection Gradings

The Fire Underwriters Survey is an organization that assigns fire protection gradings to communities. The first type of grading is a Public Fire Protection Classification. The second type of grading is a Dwelling Protection Grade.

A Public Fire Protection Classification is a numerical grade that commercial insurers may use when determining insurance premiums. Under this system, a Class 1 rating is the highest grade possible. The lowest possible grade is a Class 10 rating. If a municipality receives a Class 10 rating, it means that the community has an unrecognized level of fire protection. More specifically, a Class 10 rating means that the nearest responding fire station is beyond 5 kilometres away (by road).

A Dwelling Protection Grade is a numerical grade that personal insurers may use when determining insurance premiums for small buildings, such as single-family homes. Under this system, the highest possible grade is a Class 1 rating. The lowest possible grade is a Class 5 rating. If the FUS assigns a Class 5 rating, it means that there is little (or no) fire protection available. More specifically, a Class 5 rating means that the nearest fire station is at least 8 kilometres away (by road).

In 2018, the Fire Underwriters Survey assigned Public Fire Protection Classifications and Dwelling Protection Grades in McNab/Braeside.

Table 4 summarizes McNab/Braeside's Public Fire Protection Classifications.

Table 4. Public Fire Protection Classifications for McNab/Braeside.

Subdistricts and Contract Protection Areas	Grading	Comments
Fire Station 1 – Glasgow Station	9	Fire hall protected area – Commercial lines insured properties within 5 km by road of a fire station, but not within 150 m of a fire hydrant
Fire Station 2 – White Lake	9	Fire hall protected area – Commercial lines insured properties within 5 km by road of a fire station, but not within 150 m of a fire hydrant
Fire Station 3 – Braeside	9	Fire hall protected area – Commercial lines insured properties within 5 km by road of a fire station, but not within 150 m of a fire hydrant
McNab/Braeside	10	Unprotected area – Commercial lines insured properties further than 5 km by road of a fire hall.

Table 5 summarizes McNab/Braeside's Dwelling Protection Grades.

Table 5. Dwelling Protection Grades for McNab/Braeside.

Subdistricts and Contract Protection Areas	Grading	Comments
Fire Station 1 – Glasgow Station	3B	Fire hall protected area – Personal lines insured properties within 8 km of a fire hall, but not within 300 m of a fire hydrant.
Fire Station 2 – White Lake	3B	Fire hall protected area – Personal lines insured properties within 8 km of a fire hall, but not within 300 m of a fire hydrant.
Fire Station 3 – Braeside	3B	Fire hall protected area – Personal lines insured properties within 8 km of a fire hall, but not within 300 m of a fire hydrant.
McNab/Braeside	5	Unprotected area – Personal lines insured properties further than 8 km by road of a fire hall.

As seen in the tables above, the Public Fire Protection Classifications and the Dwelling Protection Grades assigned to McNab/Braeside are at the lower end of the rating system.

2.3 Overview of Bylaws and Agreements in McNab/Braeside

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. E&R bylaws also set the level of service the local firefighters must provide.

Establishing and Regulating Bylaw for McNab/Braeside

As of this CRA, the E&R bylaw for McNab/Braeside is Bylaw 2018-68.

According to Bylaw 2018-68, the Department must provide the core services listed below.

Fire Prevention and Public Education

- Facilitate smoke alarm program.

- Assist schools to facilitate fire safety programs.
- Facilitate the “Older and Wiser” Program for elderly residents.
- Mail safety brochures to residents with tax notices.

Burning Bylaw Enforcement and Permits

- Educate all staff members that issue permits.

Fire Code Enforcement

- Conduct residential inspections (upon complaint).
- Conduct business inspections (upon request).
- Conduct smoke alarm inspections (with an emphasis on fire prevention and education)
 - Enforce fire code as related to smoke alarms (as a last resort).

Emergency Response

- Provide fire suppression services (including interior and exterior structural attack).
- Provide auto extrication services (including heavy rescue).
- Conduct hazardous material responses (at the awareness level).
- Conduct water/ice rescues (specifically, level 1 shore-based rescues).

2.3.2 Other Fire Protection Bylaws

Overview

In addition to an E&R bylaw, a municipal council may pass other fire protection bylaws, such as:

- open burning bylaws
- false alarm bylaws
- fireworks bylaws
- fire route bylaws

Other Fire Safety Bylaws in McNab/Braeside

As of this CRA, McNab/Braeside enforces Bylaw 2024-17. This bylaw exists to establish fees and charges for the use of various services (including fire protection services) and municipal properties.

2.3.3 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 McNab/Braeside

As of this CRA, McNab/Braeside participates in the Renfrew County Mutual Aid Plan.

2.3.4 Automatic Aid Agreements

Overview

Public Fire Safety Guideline 04-04-12: Automatic Aid outlines the requirements for automatic aid agreements. An automatic aid agreement allows the closest fire department to respond to an incident regardless of municipal boundaries. The purpose of the agreements is to reduce the time it takes for firefighters to arrive at the scene of a fire and begin suppression duties.

Automatic Aid in McNab/Braeside

As of this CRA, McNab/Braeside does not participate in any automatic aid agreements.

2.3.5 Fire Protection Agreements

Overview

Public Fire Safety Guideline 04-09-12: Fire Protection Agreements outlines the requirements for fire protection agreements. A municipality may enter into a fire protection agreement if it does not have an existing fire department or does not have the means to establish one. A municipality may also enter into a fire protection agreement to have multiple departments operating a joint fire department.

A fire protection agreement can provide a municipality with access to resources such as additional staffing and specialized equipment. The agreements can also help a municipality obtain assistance with its public education and code enforcement initiatives.

Fire Protection Agreements in McNab/Braeside

Table 6 summarizes McNab/Braeside's current fire protection agreements.

Table 6. Current fire protection agreements in McNab/Braeside.

Agreement Number	Participating Agency	Scope of Agreement
Bylaw 2021-46	Lanark Highlands	Bylaw 2021-46 authorizes McNab/Braeside to supply fire protection services in a specified portion of Lanark Highlands.
Bylaw 2019-23	Ontario Power Generation Inc.	Bylaw 2019-23 authorizes McNab/Braeside to occupy a portion of land on a non-exclusive basis for the purposes of erecting, maintaining, training, and operating a dry hydrant and associated equipment.
Bylaw 2017-05	Ministry of Natural Resources and Forestry	Bylaw 2017-05 authorizes the Ministry of Natural Resources and Forestry to provide fire management services for a specified fire protection area.

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 McNab/Braeside

Size

McNab/Braeside is 255.28 square kilometres in area, with a population density of 29.7 persons per square kilometre.

Location

McNab/Braeside is located in Renfrew County on the south shore of the Ottawa River. The Madawaska River also passes through the town.

McNab/Braeside is bordered by the following communities:

- Township of Horton (to the northwest)
- Town of Arnprior (to the east)
- Mississippi Mills (to the south)
- Greater Madawaska (to the west)

Figure 2 illustrates the location of McNab/Braeside in relation to Renfrew County.

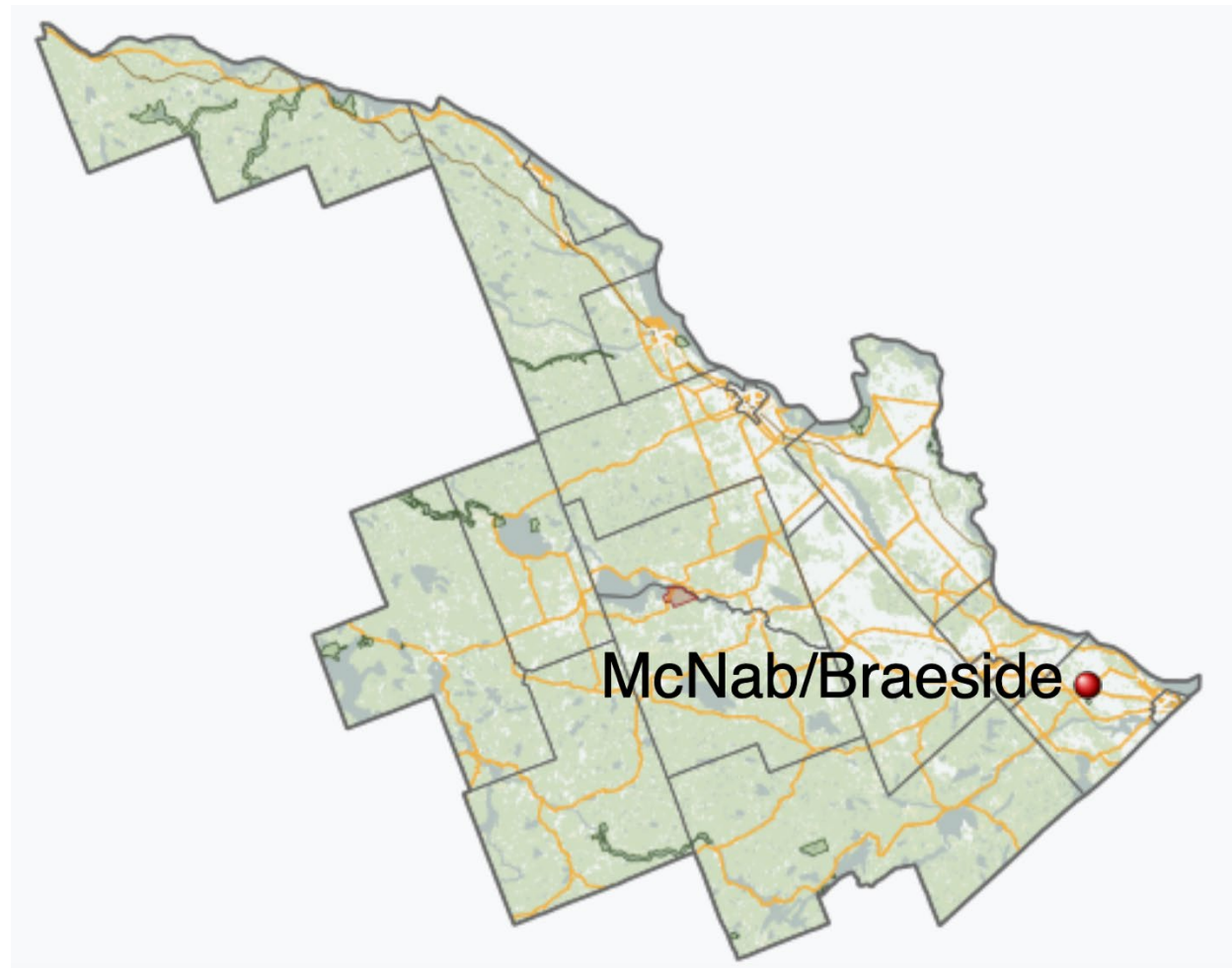


Figure 2. Location of McNab/Braeside within Renfrew County.

Landscape

McNab/Braeside is a mostly rural community. The township has a waterfront along the Ottawa and Madawaska rivers, as well as White Lake. The remaining landscape primarily consists of farmland and forested areas.

Lakes, Rivers, and Other Bodies of Water

McNab/Braeside contains portions of the Ottawa River, Madawaska River, and White Lake. The township also contains an abundance of smaller streams and creeks.

Due to McNab/Braeside's proximity to large bodies of water, the township has a considerable shoreline, as well as areas with dams and swift-running water.

Forested Areas and Trails

McNab/Braeside contains a significant number of forested areas.

One of the most prominent forested areas in McNab/Braeside contains the Algonquin Trail. The trail runs through McNab/Braeside, following along the shore of the Ottawa River before turning west towards Renfrew. The trail is open for hiking, biking, Nordic skiing, ATV/RTV riding, and snowmobiling. Other trails in the area include the Russett Trail and a nature trail that runs through Clay Bank Nature Park.

In addition to Clay Bank Nature Park, McNab/Braeside contains Alexander Stewart Park and various Ontario parks.

Remote Areas

In addition to heavily forested areas, there are several remote-access areas in McNab/Braeside. These areas include islands along the Ottawa River and White Lake, which house permanent and seasonal residences. There are no fire suppression services delivered to the township's remote-access areas.

Roadways

The main provincial road in McNab/Braeside is Highway 417, which runs in an east-west direction through the township.

The county roads in McNab/Braeside are county roads 1, 2, 3, 6, 23, 45, 52, 54, 63, and 508.

In addition to the highway and county roads, McNab/Braeside contains various municipal roads, sideroads, and streets.

Flight Paths

There are several parts of McNab/Braeside that are in the direct flight path of Ottawa Airport and CFB Petawawa.

Bridges and Other Access Points

There are several bridges in McNab/Braeside that constitute a vital part of the township's infrastructure. These bridges include the Stewartville Bridge, White Lake Bridge, and Burnstown Bridge.

3.3 Geographic Profile Summary

Table 7 lists the main geographic features found in McNab/Braeside. The table indicates if the features impact the Department's training and equipment, response and travel times, station locations, and response protocol.

Table 7. Geographic features found in McNab/Braeside.

Geographic Feature	Training & Equipment Impact	Response & Travel Time Impact	Fire Station Location Impact	Response Protocol Impact
Provincial highways	✓	✓	✓	✓
County and municipal roads	✓	✓	✓	✓
Bridges	✓	✓	✓	✓
Forested and remote areas	✓	✓		✓
Trails	✓	✓		✓
Bodies of water	✓	✓		✓
Shorelines	✓	✓		✓
Dams/swift water	✓	✓	✓	✓

3.4 Risks Identified by the Geographic Profile

Table 8 lists the risks identified by the geographic profile for McNab/Braeside.

Table 8. Geographic profile risk summary.

Risk	Likelihood	Consequence	Risk Level
Road/highway incident	Almost certain	Moderate	High
Localized flooding	Almost certain	Minor	Moderate
Wildland fire	Almost certain	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.

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**”).

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.

It is also important to note that some buildings do not have OBC classifications. For instance, many agricultural buildings are classified by the National Farm Building Code (“**NFBC**”). Agricultural buildings and other non-occupancies may have different associated risks than occupancies that are classified under the OBC.

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

4.2 Building Stock in McNab/Braeside

4.2.1 Ontario Fire Marshal Directive 2022-001

On February 25, 2022, the OFM issued Directive 2022-001, which addresses truss and lightweight construction systems (“**LWC**”). According to the OFM, LWC may experience premature failure and rapid collapse under certain fire conditions.

As per Directive 2022-001, a CRA must indicate how many local buildings have LWC. 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.

For a copy of Directive 2022-001, see Appendix D of this CRA.

LWC Occupancies in McNab/Braeside

As of this CRA, McNab/Braeside does not have records about the LWC used in its building stock. Going forward, McNab/Braeside should start tracking its LWC data for inclusion in future versions of the township's CRA.

4.2.2 Building Stock Overview

Table 9 lists the building stock in McNab/Braeside (according to information provided by the township's records).

Table 9. List of building stock in McNab/Braeside.

OBC Classification	Type of Occupancy	# of Occupancies
Group A	Assembly occupancy	12
Group B	Care and treatment occupancy	0
Group C	Residential occupancy	3,044
Groups D & E	Mercantile/commercial occupancy	17
Group F	Industrial occupancy	26

4.2.3 Building Stock Summary

Tables 10 to 13 summarize the building stock in McNab/Braeside. The tables identify various fire and life safety issues, concerns, and observations based on an assessment of the following factors:

- building use
- building density, height, and square footage
- building location
- the building's historical or cultural significance
- the building's economic impact
- the use of LWC²

² As noted above, McNab/Braeside does not currently have LWC information about its building stock.

Table 10. Group A occupancies in McNab/Braeside.

Type of Occupancy	Number of Occupancies	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
School	1	No data	• Fire safety plans may be out of date or incomplete. • Staff may lack awareness of emergency procedures and fire safety plans. • Schools must confirm that they complete six fire drills during the school year. • The status of the life safety systems may not meet compliance requirements.	Rare	Moderate	Low
Assembly hall or community hall	3	No data	• Patrons may lack awareness of secondary exits. • Staff may lack awareness of emergency procedures and fire safety plans. • Routine inspections must be completed as per code compliance regulations. • Some public functions may serve alcohol—excessive alcohol consumption can increase the potential of fire or other life safety hazards occurring.	Rare	Minor	Low
Recreational club or service club	2	No data	• Patrons may lack awareness of emergency procedures. • It may take time and resources to verify that all on-site equipment (such as commercial cooking equipment) complies with OFC regulations). • Large gatherings of people are possible. • Fire safety plans may be out of date or incomplete.	Rare	Minor	Low

Type of Occupancy	Number of Occupancies	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Museum or art gallery	1	No data	• Patrons may lack awareness of secondary exits. • Staff may lack awareness of emergency procedures and fire safety plans. • Routine inspections must be completed as per code compliance regulations.	Rare	Minor	Low
Church	5	No data	• It may take time and resources to verify that all on-site equipment (such as commercial cooking equipment) complies with OFC regulations. • Large gatherings of people are possible. • Fire safety plans may be out of date or incomplete. • Some activities may involve the use of open flames (such as candles).	Rare	Minor	Low

Table 11. Group C occupancies in McNab/Braeside

Type of Occupancy	Number of Occupancies	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Single-detached house	2,707	No data	- Homes constructed before 1975 predate the OBC. - Time and resources are required to verify that smoke and carbon monoxide alarms are installed and maintained. - Time and resources are required to verify that residents have home escape plans. - Time and resources are required to deliver public education to all residents.	Almost certain	Minor	Moderate
Other single-attached house	10	No data	- Homes constructed before 1975 predate the OBC. - Time and resources are required to verify that smoke and carbon monoxide alarms are installed and maintained. - Time and resources are required to verify that residents have home escape plans. - Time and resources are required to deliver public education to all residents.	Almost certain	Minor	Moderate

Type of Occupancy	Number of Occupancies	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Semi-detached house	15	No data	- Time and resources are required to verify that smoke and carbon monoxide alarms are installed and maintained. - Time and resources are required to verify that residents have home escape plans. - Time and resources are required to deliver public education to all residents.	Almost certain	Minor	Moderate
Row house	10	No data	- Time and resources are required to verify that smoke and carbon monoxide alarms are installed and maintained. - Time and resources are required to verify that residents have home escape plans. - Time and resources are required to deliver public education to all residents. - No LWC documentation.	Almost certain	Minor	Moderate
Seasonal dwelling	168	No data	- Homes constructed before 1975 predate the OBC. - Time and resources are required to verify that smoke and carbon monoxide alarms are installed and maintained. - Time and resources are required to verify that residents have home escape plans. - Time and resources are required to deliver public education to all residents.	Almost certain	Minor	Moderate

Type of Occupancy	Number of Occupancies	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Movable dwelling	80	No data	- Time and resources are required to verify that smoke and CO alarms are installed and maintained. - Time and resources are required to verify that residents have home escape plans. - Time and resources are required to deliver public education to all residents.	Almost certain	Minor	Moderate
Apartment or flat in a duplex	10	No data	- Time and resources are required to verify that smoke and carbon monoxide alarms are installed and maintained. - Time and resources are required to verify that residents have home escape plans. - Time and resources are required to deliver public education to all residents.	Almost certain	Minor	Moderate

Type of Occupancy	Number of Occupancies	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Apartment in a building with fewer than five storeys	40	No data	• Time and resources are required to verify that smoke and carbon monoxide alarms are installed and maintained. • Time and resources are required to verify that residents have home escape plans. • Time and resources are required to deliver public education to all residents. • Fire safety plans may be out of date or incomplete. • High-density living configurations are possible. • Detailed building inspections must be completed as per code compliance regulations. • The status of the life safety systems may not meet compliance requirements.	Almost certain	Minor	Moderate

Type of Occupancy	Number of Occupancies	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Residential units (of six units or less) above or behind a commercial building in the downtown core	4	No data	- Mixed-use occupancies are located in the downtown core, which is a high-density area. - Buildings constructed before 1975 predate the OBC. - Time and resources are required to verify that smoke and carbon monoxide alarms are installed and maintained. - Time and resources are required to verify that residents have home escape plans. - Time and resources are required to deliver public education to all residents. - Detailed building inspections must be completed as per code compliance regulations. - The status of the life safety systems may not meet compliance requirements.	Almost certain	Minor	Moderate

Table 12. Group D and E occupancies in McNab/Braeside.

Type of Occupancy	Number of Occupancies	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
Commercial or personal service provider	17	No data	• Some commercial occupancies are located in the downtown core, which is a high-density area. • Staff may lack awareness of emergency procedures and fire safety plans. • Patrons may lack awareness of secondary exits. • Routine inspections are required as per code compliance regulations. • Significant fuel loads (such as tires and oils) are stored on site.	Rare	Minor	Low

Table 13. Group F occupancies in McNab/Braeside

Type of Occupancy	Number of Occupancies	Number of LWC Buildings	Issues, Concerns, and Observations	Risk Likelihood	Risk Consequence	Risk Level
F2: Medium hazard industrial occupancies	18	No data	• Significant on-site fuel loads are possible. • Staff may lack awareness of emergency procedures and fire safety plans. • There may be unknown commodities on site. • There may be hazardous materials on site.	Possible	Moderate	Moderate
F3: Low hazard industrial occupancies	8	No data	• Staff may lack awareness of emergency procedures. • There may be unknown commodities on site. • There may be hazardous materials on site.	Possible	Minor	Moderate

4.2.4 Future Building Development in McNab/Braeside

Table 14 summarizes the future building developments that are planned for McNab/Braeside over the coming years.

Table 14. Planned building developments in McNab/Braeside.

Name	Type	# of Units
Braeburn Estates: Phase 3	Residential	15
Hidden River Estates (draft concept)	Residential	100
Greater Madawaska: River Lane Estates	Residential	26
Hogan Heights: Phase 2	Residential	41
Madawaska Lake Estates	Residential	10
Madawaska Shores: Phase 2	Residential	10 single family dwellings 37 condominium lots
River Road Estates	Residential	23
White Lake	Residential	88
Russett Arnprior	Industrial	18

As the new building developments are completed, McNab/Braeside will need to update its list of building stock to ensure it remains current.

The Department must also keep itself aware of all new buildings in the community. This responsibility includes completing inspections and updating types and levels of service as needed.

4.3 Building Inspections

4.3.1 Legislation Governing Inspections

Inspection Requirements Mandated by 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 Inspection Legislation and Requirements

- 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 carbon monoxide alarms.

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

4.4 Building Inspections in McNab/Braeside

Table 15 summarizes the number of inspections the Department completed from 2019 to 2023.

Table 15. Inspections by occupancy type, 2019 to 2023.

Type of Occupancy	2019	2020	2021	2022	2023	Total
Group A (assembly)	0	0	0	0	0	0
Group B (care and treatment)	N/A	N/A	N/A	N/A	N/A	N/A
Group C (residential)	2	2	2	2	2	10
Group D & E (mercantile/commercial)	0	0	0	0	0	0
Group F (industrial)	0	0	0	0	0	0
Other/non-occupancy	5	5	4	4	4	22
Total	7	7	6	6	6	32

Table 16 summarizes the reasons for the inspections the Department conducted from 2019 to 2023.

Table 16. Inspection reasons, 2019 to 2023.

Type of Inspection	2019	2020	2021	2022	2023	Total
Complaint inspections	0	0	0	0	0	0
Owner request inspections	2	2	2	2	0	8
Sale request inspections	0	0	0	0	0	0
Routine inspections	0	0	0	0	0	0
Licensing inspections	0	0	0	0	4	4
Other inspections	5	5	4	4	4	22
Total Number of Inspections	7	7	6	6	8	34

Table 17 summarizes the number of violations the Department identified and the number of notices it issued from 2019 to 2023.

Table 17. Violations and issued notices, 2019 to 2023.

Type of Notice	2019	2020	2021	2022	2023	Total
Verbal notice	0	0	0	0	0	0
Letter	0	1	0	0	0	1
Order	0	0	0	0	0	0
Other	0	0	0	0	0	0
Total Inspections	0	1	0	0	0	1
Resolved	N/A	100%	N/A	N/A	N/A	100%

4.5 Risks Identified by the Building Stock Profile

Table 18 lists the risks identified by the building stock profile for McNab/Braeside.

Table 18. Building stock profile risk summary.

Risk	Likelihood	Consequence	Risk Level
Fire in residential occupancy	Almost certain	Minor	Moderate
Fire/explosion in industrial occupancy	Possible	Moderate	Moderate

Risk	Likelihood	Consequence	Risk Level
Fire commercial occupancy	Rare	Minor	Low
Fire in assembly occupancy	Rare	Minor	Low

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.

4.5.1 Potential Concerns

The proposed building developments that are planned for McNab/Braeside will likely increase the size of the township's population. As such, it is in the Department's best interest to review its staffing levels and services—as well as the locations of its fire stations—in order to identify opportunities to enhance community safety.

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 McNab/Braeside

Table 19 summarizes the CI found in McNab/Braeside (based on information provided by the township’s records). The table indicates applicable fire and life safety issues, concerns, and observations for each type of CI.

Table 19. Critical infrastructure in McNab/Braeside.

Critical Infrastructure	Issues, Concerns, and Observations
Electricity distribution	• Hydro One provides electrical distribution services for McNab/Braeside. • Electricity transmission can become unreliable when poles and towers are damaged as a result of severe weather or other causes. • There have been power outages in the area every year, but they usually have a short duration. • Large transmission lines and towers are used for the distribution of hydro generation. • The electrical distribution infrastructure in McNab/Braeside is mainly above ground.
Power generation	• Ontario Power Generation provides services in McNab/Braeside. • Stewartville Dam provides services in McNab/Braeside. • Dam failures are possible. • Significant flooding is possible.
Water distribution	• McNab/Braeside does not have municipal fire hydrants. • Dry hydrants located are located in the following areas: ○ White Lake Beach Park (on the Madawaska River) ○ Usborne Street (on the Ottawa River) ○ White Lake Beach Park (on White Lake) ○ Young Road ○ Lake Madawaska • Property owners are responsible for installing and maintaining private wells and septic systems on their land. • Fire crews need access to a reliable water supply to deliver effective fire suppression services.

Critical Infrastructure	Issues, Concerns, and Observations
Radio communication and 911 communication systems	911 communication systems rely heavily on radio towers and phone/internet lines. - Communication systems can become severely affected by damage to poles and towers (such as weather damage).
Telecommunications	- Cell service and landlines are available in most areas of McNab/Braeside. - Bell Canada owns and operates telecommunication lines and poles in the area. - Telecommunication systems can become severely affected by damage to poles and towers (such as weather damage).
Provincial, county, and municipal roads and bridges	- McNab/Braeside contains part of a provincial highway (Highway 417), as well as various county and municipal roads. - There are three main bridges in McNab/Braeside. - Damage to roads and bridges can cause serious delays during emergency responses.
Police station	The OPP detachments in Arnprior and Renfrew provide policing services to McNab/Braeside.
EMS station	Renfrew County Paramedics are the EMS providers for McNab/Braeside. Facilities are located in Arnprior and Renfrew.

5.3 Risks Identified by the Critical Infrastructure Profile

Table 20 lists the risks identified by the critical infrastructure profile for McNab/Braeside.

Table 20. Critical infrastructure profile risk summary.

Risk	Likelihood	Consequence	Risk Level
Severe weather event	Almost certain	Moderate	High
Road/highway emergency	Almost certain	Moderate	High
Localized flooding	Almost certain	Minor	Moderate
Critical infrastructure failure	Almost certain	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.

5.3.1 Potential Concerns

In addition to CI failures, a lack of CI maintenance is a potential concern for the McNab/Braeside community.

The Department relies on several types of CI when making emergency responses. For example, the Department requires the roads and bridges in McNab/Braeside to be accessible and in good repair when it responds to emergencies. If the community's CI is not kept in working order, it may impact the safety, effectiveness, or timeliness of an emergency response.

Due to the role CI plays in the Department's operations, it is imperative for McNab/Braeside to keep its CI in place and functioning. Going forward, it is in the community's best interest for McNab/Braeside to remain vigilant in regard to its CI. This responsibility includes performing routine maintenance, monitoring for incidents that could cause CI damage, and repairing any damaged CI as soon as possible.

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 should 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, McNab/Braeside has a population of 7,591 year-round residents. This number is 5.8 per cent higher than the number of residents recorded in the 2016 census.

6.2.2 Transient and Seasonal Population

Historically, McNab/Braeside has a small influx of seasonal residents during the summer months. The seasonal residents come to the area and stay in one of the township's 168 seasonal dwellings.

6.3 Age

Table 21 compares the age distribution in McNab/Braeside to the Province of Ontario (based on the findings of the 2021 Statistics Canada census).

Table 21. Age distribution in McNab/Braeside compared to the Province of Ontario.

Age Range	McNab/Braeside	Ontario
0 to 14 years	15.0%	15.8%
15 to 64 years	63.1%	65.6%
65 years and over	22.0%	18.5%
85 years and over	1.6%	2.4%

Based on the census data:

- The average age in McNab/Braeside is 44.5 (compared to the provincial average of 41.8).
- The median age in McNab/Braeside is 48.0 (compared to the provincial median of 41.6).

6.4 Language and Cultural Considerations

It is essential for fire departments to incorporate language and cultural considerations into their community programs and services.

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

Language

According to the 2021 Statistics Canada census, McNab/Braeside is a predominantly English-speaking community, with 94.7 per cent of residents identifying English as their first language. Overall, 99.9 per cent of the township’s residents can hold a conversation in English, and 10.5 per cent are bilingual in English and French.

Indigenous Population

According to the 2021 Statistics Canada census, 7.2 percent of McNab/Braeside’s residents identify as Indigenous. Those residents identify as First Nations, Métis, Inuk, and/or as part of another Indigenous group not listed.

6.5 Level of Education

Table 22 compares the highest level of education obtained by McNab/Braeside's residents aged 15 years and over to the provincial average (based on the findings of the 2021 Statistics Canada census).

Table 22. Education levels in McNab/Braeside compared to the Province of Ontario.

Education Level	McNab/Braeside	Ontario
No certificate	12.1%	15.3%
High school	32.4%	27.2%
Some post-secondary	55.4%	57.5%

6.6 Socioeconomic Makeup

Table 23 lists applicable socioeconomic statistics about the residents of McNab/Braeside (based on the findings of the 2021 Statistics Canada census).

Table 23. Socioeconomic statistics for McNab/Braeside.

Statistic	McNab/Braeside	Ontario
Number of total income recipients aged 15 years and over in private households.	6,300	11,294,815
Average total income among recipients	\$56,450	\$56,350
Average after-tax income among recipients	\$46,800	\$46,280
Average family size of economic families	2.9 people	3.1 people
Average total income of economic family	\$133,600	\$137,200
Average after-tax income of economic family	\$110,300	\$112,200
Prevalence of low income based on the low-income measure, after tax	6.0%	10.1%

6.7 Schools, Childcare Centres, and Vulnerable Occupancies

The Department must keep itself aware of all schools, childcare centres, and vulnerable occupancies in McNab/Braeside, as these sites may be at a heightened risk of fire or other emergencies.

As of this CRA, McNab Public School is the only school in McNab/Braeside. The facility is an elementary school with 272 students and 30 staff members.

There are no childcare centres or vulnerable occupancies in McNab/Braeside.

6.8 Demographic Profile Summary

Table 24 summarizes the demographic considerations discussed above and indicates applicable fire and life safety issues, concerns, and observations.

Table 24. Demographic profile summary for McNab/Braeside.

Demographic Consideration	Issues, Concerns, and Observations
Transient and seasonal population	- McNab/Braeside has a small influx of seasonal residents during the summer months. - An influx of seasonal residents will cause an increased traffic volume on the local roads. - It takes time and resources to ensure that all seasonal residents receive fire safety education.
Age	- In total, 22.0 per cent of McNab/Braeside's population is over the age of 65. - It takes time and resources to verify that seniors have working smoke alarms in their residences. - Seniors may lack the ability to implement fire safety measures in their homes, and some seniors may be unable to exit a building independently. - It can be difficult to provide fire and life safety information to seniors due to their existing knowledge, practices, and beliefs. - Some older residents do not use newer methods of communication (such as social media). If the Department only uses such methods to deliver public education, some residents may not receive important messages.
Level of education	Only 12.1 per cent of McNab/Braeside's population does not have a high school diploma or equivalent. However, the Department must strive to provide all residents with public education messages that are clear and applicable to them.

Demographic Consideration	Issues, Concerns, and Observations
Schools	- It takes time and resources to verify that schools conduct fire drills and can implement their fire safety plans. - It takes time and resources to deliver public education about fire and life safety at schools. - On-site visits to schools are needed to identify hazards and determine risk levels. - The Department is required to inspect and audit all fire drills at the local school.

6.9 Risks Identified by the Demographic Profile

Table 25 lists the risks identified by the demographic profile for McNab/Braeside.

Table 25. Demographic profile risk summary.

Risk	Likelihood	Consequence	Risk Level
Road/highway emergency	Almost certain	Moderate	High
Fire in residential occupancy	Almost certain	Minor	Moderate
Fire in assembly occupancy	Rare	Minor	Low

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.

6.9.1 Potential Concerns

As noted in section 4 of this CRA, the proposed building developments that are planned for McNab/Braeside will likely increase the size of the township's population. If new residents relocate to McNab/Braeside, the community's demographics may change.

In order to ensure the Department's services are applicable to all residents, the township and the Department should review the demographic profile for McNab/Braeside when it is time to conduct strategic planning. The profile should be updated (as needed). Depending on any changes to the township's demographics, the Department should consider reviewing its staffing levels and services—as well as the locations of its fire stations—to identify opportunities to enhance community safety.

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 Potential Hazards in McNab/Braeside

Severe Weather Event

A severe weather event can impact McNab/Braeside in the following ways:

- Power interruptions may occur.
- Severe weather may disrupt communication services.
- Residents may be unprepared for severe weather. As a result, some residents may not have the necessary supplies on hand during a severe weather event.
- Tourists may be unprepared for severe weather.
- Some tourists may be unfamiliar with the area and are at risk of becoming stranded, lost, or endangered during a severe weather event.
- Some severe weather conditions can result in periods of low visibility.
- Some severe weather events may result in road closures, which could cause delayed emergency responses.

Road/Highway Emergency

A road/highway emergency can McNab/Braeside in the following ways:

- Fires may occur.
- Explosions may occur.
- Injuries may occur.
- Deaths may occur.
- People may become trapped or injured.
- If hazardous materials are involved, environmental impacts are possible.

Flooding

Flooding can impact McNab/Braeside in the following ways:

- Emergency responders may need to rescue endangered people.
- Flooding may prevent emergency responders from accessing certain areas of the community.
- Flooding may cause property damage or the erosion of infrastructure.

Wildland Fire

A wildland fire can impact McNab/Braeside in the following ways:

- Fires may spread to inhabited areas.
- If fires cannot be contained, evacuations may be required.
- Environmental damage may occur.
- Road closures may be required.

7.3 Risks Identified by the Hazard Profile

Table 26 lists the risks identified by the hazard profile for McNab/Braeside.

Table 26. Hazard profile risk summary.

Hazard	Likelihood	Consequence	Risk Level
Severe weather event	Almost certain	Moderate	High
Road/highway incident	Almost certain	Moderate	High
Localized flooding	Almost certain	Minor	Moderate

Hazard	Likelihood	Consequence	Risk Level
Wildland fire	Almost certain	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 McNab/Braeside

Table 27 lists the public safety response agencies in McNab/Braeside. 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 27. Public safety response entities in McNab/Braeside.

Response Agency	Jurisdiction	Role at Incident	Issues or Concerns
Renfrew County EMS	- Fires - Explosions - Medical emergencies - Structural failures - Road and highway emergencies - Hazardous materials incidents	- Care for patients. - Transport patients as needed. - Monitor firefighter health at fire scenes.	Delayed response times are possible.
Renfrew County and District Health Unit	- Domestic water incidents - Health investigations	- Issue boil-water advisories. - Assist with health issues. - Conduct exposure investigations. - Provide advice regarding responses to health emergencies.	There are no issues or concerns.
Ontario Provincial Police	- Fires - Explosions - Sudden deaths - Structural failures - Road and highway emergencies - Hazardous materials incidents	- Ensure the incident scene is secure. - Assist with investigations. - Investigate collisions, deaths, and criminal activity. - Control traffic.	Delayed response times are possible.
Hydro One	- Fires - Downed power lines - Electrical fires in transmission equipment	- Ensure the affected area is safe/secure. - Isolate electrical services. - Repair electrical infrastructure. - Restore electrical services.	- Delayed response times are possible. - Lengthy outages are possible.

Response Agency	Jurisdiction	Role at Incident	Issues or Concerns
Telecommunications companies	• Communication service disruptions	• Repair damaged lines and systems.	• There are no issues or concerns.
Enbridge Gas	• Fires • Leaks	• Ensure the affected area is safe/secure. • Isolate or shut off services. • Repair gas infrastructure. • Restore gas services.	• Delayed response times are possible.
Office of the Fire Marshal	• Fires that meet the FPPA's criteria • Explosions that meet the FPPA's criteria • Large-scale emergencies	• Investigate fires and explosions that meet the FPPA's criteria. • Assist police with investigations. • Provide advice during large-scale emergencies (if needed). • Provide limited equipment for large-scale emergencies.	• Delayed response times are possible.
Emergency Management Ontario	• Large-scale emergencies	• Provide advice during large-scale emergencies (if needed). • Provide limited equipment for large-scale emergencies.	• Delayed response times are possible.
Ministry of Natural Resources and Forestry	• Wildland fires	• Provide firefighting services and equipment in forested areas to assist with suppressing wildland fires.	• Delayed response times are possible. • Limited staffing numbers are possible.
Ministry of the Environment	• Hazardous spills • Hazardous materials incidents	• Order the cleanup of spill sites. • Assist with controlling spills and the release of substances.	• There are no issues or concerns.

Response Agency	Jurisdiction	Role at Incident	Issues or Concerns
Ministry of Labour	Workplace accidents	Investigate applicable issues in the workplace.	There are no issues or concerns.
Ministry of Transportation	- Fires - Motor vehicle collisions	- Issue road closures and detours. - Manage winter operations. - Manage road maintenance.	There are no issues or concerns.
Technical Standards and Safety Authority	- Fires - Carbon monoxide emergencies - Elevator emergencies	- Assist with investigations. - Provide limited training.	- Delayed response times are possible. - Not all responding personnel may have the same level of training. - Training can be costly to arrange and complete.

8.3 Risks Identified by the Public Safety Response Entities Profile

The public safety response entities profile for McNab/Braeside does not identify any current threats to the township. However, McNab/Braeside and the Department 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 township's best interest to maintain good working relationships with those organizations. Doing so can help improve communication and response efforts during emergencies.

8.3.1 Potential Concerns

McNab/Braeside must recognize that the Department is not equipped to deal with all potential incidents that can occur in the community. Some responses may require equipment the Department lacks. Other incidents may require emergency responders to have specialized training that the Department's personnel have not received. If such an incident occurs, the Department's 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 to:

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

Community service groups can also help:

- 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 McNab/Braeside

Table 28 summarizes the community services in McNab/Braeside that may have the abilities and resources to assist the Department when it responds to an emergency. The table also notes issues, concerns, and observations for each community service (as applicable).

Table 28. Community services in McNab/Braeside.

Community Service	Assistance Provided	Issues, Concerns, and Observations
Renfrew County and District Health Unit	The health unit provides vulnerable persons with access to public education. The health unit also provides advice and services for firefighters who were exposed to contaminants during a response.	There are no issues or concerns.
Municipal halls and community centres	Municipal halls and community centres are large assembly occupancies that can serve as evacuation spaces and warming/cooling centres.	- Some facilities may not have emergency power or backup power generators. - McNab/Braeside should consider formalizing agreements regarding the use of non-municipal buildings during emergencies.
Schools	Schools are large assembly occupancies that can serve as evacuation spaces and warming/cooling centres. Schools are also locations where fire departments can deliver fire and life safety education programs.	- Some schools may not have emergency power or backup power generators. - McNab/Braeside should formalize agreements regarding the use of schools as evacuation centres during emergencies.
Faith-based groups	Churches may offer services to support individuals who suffer a loss due to a fire or other emergency.	- Limited staffing levels are possible. - Delayed response times are possible.
Salvation Army	The Salvation Army can provide shelter and clothing and help people obtain other necessities.	There are no issues or concerns.

Community Service	Assistance Provided	Issues, Concerns, and Observations
Red Cross	The Red Cross 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.	• Delayed deployment times are possible. • Funding is required to access support from the Red Cross.
Victim Services of Renfrew County	Victim services can provide immediate on-site crisis and trauma services. Victim services can also support urgent practical matters and help arrange other resources. The local fire department or police crew can activate victim services.	• There are no issues or concerns.

9.3 Risks Identified by the Community Services Profile

The community services profile for McNab/Braeside does not identify any current threats to the township. However, McNab/Braeside and the Department should review the information in this profile carefully. Knowing the availability and limitations of the identified community services will help McNab/Braeside 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 are required to support the economic sectors in its community.

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 Statistics in McNab/Braeside

10.2.1 Number of Workers per Industry

According to the 2021 Statistics Canada census, the labour force in McNab/Braeside comprises 4,060 workers (aged 15 years and over). Table 29 shows the number of workers per industry.

Table 29. Workers per industry in McNab/Braeside.

Occupation	Labour Force
Legislative and senior management occupations	60
Business, finance and administration occupations	560
Natural and applied sciences and related occupations	270
Health occupations	290
Occupations in education, law and social, community and government services	505
Occupations in art, culture, recreation and sport	75

Occupation	Labour Force
Sales and service occupations	845
Trades, transport and equipment operators, and related occupations	1,065
Natural resources, agriculture and related production occupations	115
Occupations in manufacturing and utilities	225
Occupation – not applicable	50

Based on the data from Statistics Canada, most of the workers in McNab/Braeside are employed in the “trades, transport and equipment operators, and related occupations” category. There is also a high number of workers in the “sales and service occupations” category.

10.2.2 Commuting Times and Destination

Most of McNab/Braeside’s residents drive to work and report a work commute of less than 45 minutes.

In total, 87.8 per cent of McNab/Braeside’s employed residents commute to a job outside of the township.

10.2.3 Unemployment Rate

According to the 2021 Statistics Canada census, the unemployment rate in McNab/Braeside is 9.5 per cent (compared to the provincial average of 12.2 per cent).

10.3 Primary Economic Sectors in McNab/Braeside

10.3.1 Tourism

As noted in section 6 of this CRA, McNab/Braeside experiences a yearly influx of seasonal residents and tourists during the summer months. Many of the seasonal residents live in one of the seasonal occupancies located in the remote areas of the township. The additional tourism likely contributes to local businesses.

10.3.2 Agriculture

Due to the rural composition of McNab/Braeside, agriculture is one of the most significant economic sectors in the township. Table 30 lists the number of farming operations in McNab/Braeside (according to the 2021 Statistics Canada census).

Table 30. Number of farming operations in McNab/Braeside.

Type of Operation	Number of Farms
Soybean farming	18
Corn farming	1
Other grain farming	4
Vegetable and melon farming	1
Mushroom production	1
Other food crops grown under cover	1
Hay farming	17
Fruit and vegetable combination farming	3
Maple syrup and products production	3
All other miscellaneous crop farming	8
Beef cattle ranching and farming including feedlots	27
Dairy cattle and milk production	3
Chicken egg production	1
Sheep farming	3
Apiculture	1
Horse and other equine production	3
Animal combination farming	7
All other miscellaneous animal production	1
Total Number of Farms	108

10.3.3 Industries

According to the official website for McNab/Braeside, the township contains businesses operating in the following industries and fields:

- Art
- Automotive
- Beauty/Esthetics
- Catering
- Clothing
- Communications
- Construction
- Consulting
- Delivery Services
- Electric
- Engraving
- Entertainment

- Gift and Craft Shops
- Graphic Design
- Health and Fitness
- Home Improvement
- Home Services
- IT Services
- Janitorial/Cleaning
- Painting
- Photography
- Real Estate
- Restaurants
- Roofing
- Security
- Signs and Printing
- Sports
- Transportation
- Wedding Services
- Welding

10.4 Risks Identified by the Economic Profile

Table 31 lists the risks identified by the economic profile for McNab/Braeside.

Table 31. Economic profile risk summary.

Risk	Likelihood	Consequence	Risk Level
Road/highway emergency	Almost certain	Moderate	High
Fire in residential occupancy	Almost certain	Minor	Moderate
Fire/explosion in industrial occupancy	Possible	Moderate	Moderate
Fire in commercial occupancy	Rare	Minor	Low

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.

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 McNab/Braeside, 2019 to 2023

The past loss and event history profile for McNab/Braeside assesses the township'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 dollar loss fires in McNab/Braeside per building group
- the percentage of total fires in McNab/Braeside per building group
- the percentage of total fires in Ontario per building group
- the amount of dollar loss in McNab/Braeside per building group
- the number of injuries and deaths caused by fires in McNab/Braeside per building group
- the known causes of dollar loss fires in McNab/Braeside per building group

Note: As of this CRA, provincial dollar loss data for 2023 is unavailable.

Table 32. Fire loss statistics for McNab/Braeside, 2019.

Occupancy	Fires	M/B %	ON %	\$ Loss	Injuries	Deaths	Causes
Group A (assembly)	0	0%	3%	\$0	0	0	• N/A
Group B (detention, care, and treatment)	0	0%	1%	\$0	0	0	• N/A
Group C (residential)	3	33%	49%	\$354,000	0	0	• accidental (human error) • undetermined • chimney
Groups D & E (commercial and mercantile)	0	0%	4%	\$0	0	0	• N/A
Group F (industrial)	0	0%	5%	\$0	0	0	• N/A
NFBC structure	0	0%	2%	\$0	0	0	• N/A
Other structure	1	11%	3%	\$10,000	0	0	• undetermined
Vehicle fire	5	56%	33%	\$97,500			• electrical failure • mechanical failure
Totals	9			\$461,500	0	0	

Table 33. Fire loss statistics for McNab/Braeside, 2020.

Occupancy	Fires	M/B %	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)	1	33%	53%	\$26,000	0	0	• arson
Groups D & E (commercial and mercantile)	0	0%	4%	\$0	0	0	• N/A
Group F (industrial)	0	0%	5%	\$0	0	0	• N/A
NFBC structure	0	0%	2%	\$0	0	0	• N/A
Other structure	0	0%	4%	\$0	0	0	• N/A
Vehicle fire	2	67%	30%	\$10,500	0	0	• mechanical failure
Totals	3			\$36,500	0	0	

Table 34. Fire loss statistics for McNab/Braeside, 2021.

Occupancy	Fires	M/B %	ON %	\$ Loss	Injuries	Deaths	Causes
Group A (assembly)	0	0%	3%	\$0	0	0	• N/A
Group B (detention, care, and treatment)	0	0%	2%	\$0	0	0	• N/A
Group C (residential)	4	67%	75%	\$550,000	1	0	• undetermined • chimney
Groups D & E (commercial and mercantile)	0	0%	6%	\$0	0	0	• N/A
Group F (industrial)	0	0%	7%	\$0	0	0	• N/A
NFBC structure	0	0%	3%	\$0	0	0	• N/A
Other structure	0	0%	6%	\$0	0	0	• N/A
Vehicle fire	2	33%	39%	\$26,000	0	0	• mechanical failure
Totals	6			\$576,000	1	0	

Table 35. Fire loss statistics for McNab/Braeside, 2022.

Occupancy	Fires	M/B %	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)	2	33%	52%	\$745,000	0	0	• accidental (grease fire) • undetermined
Groups D & E (commercial and mercantile)	0	0%	5%	\$0	0	0	• N/A
Group F (industrial)	0	0%	5%	\$0	0	0	• N/A
NFBC structure	0	0%	2%	\$0	0	0	• N/A
Other structure	2	33%	4%	\$505,000	0	0	• mechanical failure • undetermined
Vehicle fire	2	33%	29%	\$17,000	0	0	• mechanical failure
Totals	6			\$1,267,000	0	0	

Table 36. Fire loss statistics for McNab/Braeside, 2023.

Occupancy	Fires	M/B %	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)	8	62%	No data.	\$2,335,000	0	0	• arson (suicide) • chimney • undetermined
Groups D & E (commercial and mercantile)	0	0%	No data.	\$0	0	0	• N/A
Group F (industrial)	0	8%	No data.	\$0	0	0	• N/A
NFBC structure	0	0%	No data.	\$0	0	0	• N/A
Other structure	2	15%	No data.	\$23,000	0	0	• electrical
Vehicle fire	3	23%	No data.	\$75,000	0	0	• undetermined • arson (stolen vehicle) • electrical
Totals	13			\$2,433,000	0	0	

Table 37 summarizes the fire loss statistics from the preceding tables and compares them to provincial averages.³

Table 37. Total fire loss statistics in McNab/Braeside, 2019 to 2023.

Occupancy	Fires	M/B %	ON %	\$ Loss	Injuries	Deaths
Group A (assembly)	0	0%	2%	\$0	0	0
Group B (detention, care, and treatment)	0	0%	1%	\$0	0	0
Group C (residential)	18	49%	52%	\$4,010,000	1	0
Groups D & E (commercial and mercantile)	0	0%	4%	\$0	0	0
Group F (industrial)	0	0%	5%	\$0	0	0
NFBC structure	0	0%	2%	\$0	0	0
Non-OBC structure	5	14%	4%	\$538,000	0	0
Vehicle fire	14	38%	30%	\$226,000	0	0
Totals	37			\$4,774,000	1	0

11.3 Response Statistics for the McNab/Braeside Fire Department

11.3.1 Fire Call Responses and Non-Fire Call Responses

Table 38 lists the Department's number of fire call responses from 2019 to 2023.

Table 38. Fire responses, 2019 to 2023.

Year	Loss Fires: Structures	Loss Fires: Vehicles	No Loss Fires	Non-Fire Calls	Total Calls
2019	4	5	1	73	83
2020	1	2	4	80	87
2021	4	2	2	86	94
2022	4	2	0	93	99
2023	10	3	5	105	123
Total	23	14	12	437	486

³ The provincial statistics only include data from 2019 to 2022, as updated statistics for Ontario were not available at the time of this CRA's development.

Table 39 compares the Department's non-fire call responses from 2019 to 2023 to the average of all fire departments in Ontario.

Table 39. Non-fire calls in McNab/Braeside vs. Ontario, 2019 to 2023.⁴

Type of Response	McNab/Braeside	Ontario
Rescue	25.6%	11.0%
Other response	17.6%	12.3%
Burning (controlled)	15.1%	2.7%
Pre-fire conditions	12.6%	4.2%
Public hazard	12.4%	4.5%
False fire calls	9.2%	17.4%
CO false calls	5.7%	3.1%
Medical/resuscitator call	1.2%	44.7%
Overpressure rupture/explosion (no fire)	0.5%	0.1%

As shown in the table above, rescues, including responses to road/highway emergencies, are the most common non-fire response completed by the Department.

11.3.2 Average Response Times

According to its records, the Department responded to 486 incidents from January 2019 to December 2023. Table 40 uses statistics from 457 of those incidents to determine the Department's average response times (dispatch time to on-scene time) from 2019 to 2023.

Table 40. Average response times, 2019 to 2023.

Year	Calls Reviewed	Average Minutes per Call
2019	74	11.1 minutes
2020	79	10.5 minutes
2021	87	13.4 minutes
2022	94	13.0 minutes
2023	123	13.0 minutes
2019 to 2023	457	12.3 minutes

⁴ The provincial statistics only include data from 2019 to 2022.

11.4 Risks Identified by the Past Loss and Event History Profile

Table 41 lists the risks identified by the past loss and event history profile for McNab/Braeside.

Table 41. Past loss and event history profile risk summary.

Risk	Likelihood	Consequence	Risk Level
Road/highway emergency	Almost certain	Moderate	High
Fire in residential occupancy	Almost certain	Minor	Moderate
Fire/explosion in industrial occupancy	Possible	Moderate	Moderate
Wildland fire	Almost certain	Minor	Moderate
Fire in commercial occupancy	Rare	Minor	Low
Fire in assembly occupancy	Rare	Minor	Low

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 that it identified in the McNab/Braeside community 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 past loss and event history profile.

Table 42 explains each level of risk likelihood.

Table 42. Likelihood levels used for the risk matrix.

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 from EMO's HIRA methodology (as defined in Table 43).

Table 43. Consequence levels used for the risk matrix.

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.

Weighting Structure

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 severity, which is referred to as a total risk score (as defined in Table 44).

Table 44. Potential risk severity levels.

Severity Level	Total Risk 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 Community Risks Identified in McNab/Braeside

Table 45 presents the risk matrix for McNab/Braeside. The table shows the likelihood and consequence scores that were assigned to each risk in order to calculate its total risk severity (total risk score) and priority (overall risk level).

Table 45. Risk matrix for McNab/Braeside.

Risk	Likelihood Score	Life Safety Consequence	Evacuation Consequence	Psychosocial Consequence	Property Damage Consequence	Critical Infrastructure Consequence	Environmental Consequence	Economic Consequence	Reputational Consequence	Consequence Score	Risk Score	Risk Level
Severe weather event	6	6	2	1	2	2	2	1	1	17	102	High
Road/highway emergency	6	9	1	1	1	1	2	0	1	16	96	High
Fire in residential occupancy	6	6	1	1	2	1	2	1	1	15	90	Moderate
Localized flooding	6	6	2	1	2	0	1	1	2	15	90	Moderate
Critical infrastructure failure	6	3	0	1	2	2	2	2	2	14	84	Moderate
Fire/explosion in industrial occupancy	4	6	1	1	2	1	2	2	1	16	64	Moderate
Wildland fire	6	3	1	1	1	0	1	0	1	8	48	Low
Fire in commercial occupancy	3	6	1	1	1	1	2	1	1	14	42	Low
Fire in assembly occupancy	3	6	1	1	1	1	1	1	1	13	39	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 McNab/Braeside. 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 the Department 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 a range of potential 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.

The Department should use the RTPs to guide the development of programs and services to lessen the impacts of the community's identified risks.

13.2 Severe Weather Event

Risk Level: High

Risk Score: 102

Applicable Community Profile

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

Current Treatment, Capability, and Services Provided

- The Department responds to all types of weather-related emergencies, including snowstorms and windstorms.
- If severe weather damages any infrastructure in McNab/Braeside, the Department provides rescue/evacuation services and establishes a safety zone (if necessary) until the proper authority arrives to repair or isolate the damaged infrastructure.

Administrative and Operational Risks, Concerns, and Observations

- Severe weather can damage critical infrastructure.
- If severe weather damages any buildings or infrastructure in McNab/Braeside, it may take time for the proper authority to arrive at the emergency site to begin repairs.
- Severe weather can cause traffic issues on the local roads.
- Severe weather can last for many days. If McNab/Braeside experiences a prolonged severe weather event, the Department's firefighters may struggle to balance their personal commitments with their emergency response duties.

Determining Appropriate Fire Protection Services

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

McNab/Braeside has experienced several severe weather events in the last few years, including snowstorms, windstorms, and localized flooding. Based on these trends, future severe weather events 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?

In most cases, the Department can deliver the required services.

If the Department needs additional resources or specialized assistance during a severe weather event, it can receive support through its mutual aid plan. Depending on the location of a severe weather event, the Department may also be able to request assistance from the MNR.

Is there a way to make the community safer?

The Department can continue providing public education about emergency preparedness (such as what to do before, during, and after emergencies) and the importance of 72-hour emergency kits.

The Department can work with relevant external partners (as applicable) to deliver public education about emergency preparedness.

The Department can ensure that McNab/Braeside conducts annual emergency management exercises.

Are there emerging risks that the Department cannot manage or is not managing?

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

Recommended Risk Treatment Action and Strategy**Mitigate**

- Continue providing public education about emergency preparedness and the importance of 72-hour emergency kits.

Share

- Work with applicable external partners to implement public education initiatives about emergency preparedness.

Resources Needed

- Implementing this RTP will require the Department's time and resources.
- Preparing and distributing public education materials (such as flyers and handouts) will require resources.

Timeline

- The Department should begin incorporating the strategies in this RTP into its regular operations as soon as possible.

Financial Implications

- Developing public education materials may have associated costs.

13.3 Road/Highway Emergency

Risk Level: High

Risk Score: 96

Applicable Community Profile

This risk was identified by the geographic profile, critical infrastructure profile, demographic profile, hazard profile, economic profile, and past loss and event history profile.

Current Treatment, Capability, and Services Provided

- The Department responds to various road and highway emergencies (such as motor vehicle collisions and vehicle fires) and provides fire suppression, auto extrication, and rescue services as needed.
- The Department responds to incidents involving hazardous materials.
- If an incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid plan.

Administrative and Operational Risks, Concerns, and Observations

- Visitors travelling through McNab/Braeside may be unfamiliar with the township's road network.
- Many commercial vehicles travel on the roads that run through McNab/Braeside. A high volume of traffic increases the risk of road/highway emergencies.
- Some vehicles travelling in and through McNab/Braeside may be transporting unknown cargo, including hazardous materials.

Determining Appropriate Fire Protection Services

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

Over the past five years, the Department has responded to 14 vehicle fires. Collectively, those incidents resulted in a dollar loss of approximately \$226,000.

The Department has also responded to various motor vehicle collisions that required the provision of rescue and extrication services. Overall, rescue calls account for 25.6 per cent of the emergency calls the Department receives. Based on current trends and statistics, future road/highway emergencies in McNab/Braeside are likely.

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?

The Department can deliver the required services for most incidents.

If an incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid plan.

Is there a way to make the community safer?

The Department can ensure that its personnel receive training on vehicle firefighting, auto extrication, and hazardous materials responses. The Department can also ensure that its personnel receive training about responding to incidents that involve electric vehicles.

Are there emerging risks that the Department cannot manage or is not managing?

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

Recommended Risk Treatment Action and Strategy**Mitigate**

- Ensure the Department's personnel receive ongoing training about vehicle firefighting, auto extrication, and hazardous materials responses.
- Ensure the Department's personnel receive ongoing training about responding to incidents that involve electric vehicles.

Resources Needed

- Implementing this RTP will require the Department's time and resources.

Timeline

- The Department should begin incorporating the strategies in this RTP into its regular operations as soon as possible.

Financial Implications

- Additional training may have associated costs.

13.4 Fire in Residential Occupancy

Risk Level: Moderate

Risk Score: 90

Applicable Community Profile

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

Current Treatment, Capability, and Services Provided

- The Department responds to fires in residential occupancies and provides exterior and interior fire suppression services and rescue services as needed.
- If an incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid plan.
- The Department delivers applicable public education messages.
- The Department visits local schools several times each year to deliver public education on the importance of smoke/CO alarms, home escape plans, and fire safety in the home.
- The Department inspects residential smoke/CO alarms upon request. The Department will also offer to inspect a residential smoke/CO alarm when it is called to a residence for other concerns.

Administrative and Operational Risks, Concerns, and Observations

- The Department does not have accurate statistics regarding the number of residences it inspected as part of its smoke/CO alarm program from 2019 to 2023.

Determining Appropriate Fire Protection Services

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

Over the past five years, the Department has responded to 17 fires in residential occupancies. Collectively, those incidents resulted in a dollar loss of approximately \$3,660,000.

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

Based on the loss statistics for McNab/Braeside over the past five years, the current treatment does meet the community's needs and expectations.

Is the community capable of delivering the required services?

The Department can deliver the required services for most incidents. If an incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid plan.

Is there a way to make the community safer?

The Department can inspect McNab/Braeside's high-density dwellings, multi-unit residences, and mixed-use occupancies on a regular basis. Doing so will help the Department verify whether the buildings are maintaining their code compliance and safety planning obligations.

The Department can resume its smoke/CO alarm program. Once the program is in place, the Department can determine what goals it wants the program to achieve. The Department can also start keeping more detailed statistics about the program.

The Department can strive to deliver fire safety messages to all residents of McNab/Braeside by continuing to provide public education and attending community events.

McNab/Braeside can establish a fire prevention policy that includes an inspection schedule regarding residential occupancies. Council could also use the document to formalize specific components of the Department's operations.

Are there emerging risks that the Department cannot manage or is not managing?

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

Recommended Risk Treatment Action and Strategy**Mitigate**

- Develop a fire prevention policy and ensure it includes an inspection schedule regarding residential occupancies.
- Inspect applicable residential occupancies in McNab/Braeside (such as multi-unit residences) on a regular basis to verify that the buildings are maintaining their code compliance and safety planning obligations.
- Continue providing public education and attending community events to deliver fire safety information to the residents of McNab/Braeside.

Resources Needed

- Implementing this RTP will require the Department's time and resources.
- Preparing and distributing public education information (such as flyers and handouts) will require resources.

Timeline

- The Department should begin incorporating the strategies in this RTP into its regular operations as soon as possible.

Financial Implications

- Developing public education materials may have associated costs.

13.5 Localized Flooding

Risk Level: Moderate

Risk Score: 90

Applicable Community Profile

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

Current Treatment, Capability, and Services Provided

- The Department responds to all emergency calls in McNab/Braeside. Some of those calls may involve localized flooding.
- The Department may be able to assist with evacuations during instances of localized flooding (if needed).
- If an incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid plan.

Administrative and Operational Risks, Concerns, and Observations

- Depending on the nature and location of a flood, the Department may have difficulty accessing certain areas of the community.

Determining Appropriate Fire Protection Services

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

Flooding can occur due to heavy rainfall, spring thaws, or dam failures. Historically, McNab/Braeside experiences localized flooding during the spring.

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?

In most cases, the Department should have the capacity to deliver the required services.

If an incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid plan. If the flooding is the result of a dam failure, McNab/Braeside will rely on the applicable

external agency to address the issue and repair any damaged infrastructure.

Is there a way to make the community safer?

The Department can provide public education about localized flooding.

The Department can provide public education about the importance of 72-hour emergency kits.

Are there emerging risks that the Department cannot manage or is not managing?

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

Recommended Risk Treatment Action and Strategy**Accept**

- Continue to monitor for signs of localized flooding (as applicable).

Mitigate

- Provide public education about localized flooding.
- Provide public education about the importance of 72-hour emergency kits.

Resources Needed

- Implementing this RTP will require the Department's time and resources.

Timeline

- The Department should begin incorporating the strategies in this RTP into its regular operations as soon as possible.

Financial Implications

- Developing public education materials may have associated costs.

13.6 Critical Infrastructure Failure

Risk Level: Moderate

Risk Score: 84

Applicable Community Profile

This risk was identified by the critical infrastructure profile.

Current Treatment, Capability, and Services Provided

- The Department responds to some critical infrastructure failures, such as downed hydro lines and bridge and road closures.
- If any critical infrastructure in McNab/Braeside is damaged, the Department provides a safety zone and conducts evacuations (if necessary) until the proper authorities arrive to isolate or repair the damaged systems.

Administrative and Operational Risks, Concerns, and Observations

- If any of McNab/Braeside's critical infrastructure is damaged, it may take time for the proper authorities to arrive at the emergency scene to begin repairs.
- The Department must ensure that its firefighters are trained to recognize the risks that are associated with damaged critical infrastructure. In addition, the Department must ensure that its personnel are aware of the proper safety precautions to take when responding to an incident that involves a critical infrastructure failure.

Determining Appropriate Fire Protection Services

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

Critical infrastructure can fail for many reasons, including lack of maintenance or damage from external forces.

Over the past five years, McNab/Braeside has experienced several critical infrastructure failures due to severe weather events and aging infrastructure.

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?

The Department can provide a safety zone and evacuation assistance until the proper authorities arrive to isolate or repair any damaged critical infrastructure.

Is there a way to make the community safer?

McNab/Braeside can continue monitoring and maintaining the critical infrastructure under its jurisdiction.

The Department can provide public education about emergency preparedness and the importance of 72-hour emergency kits.

Are there emerging risks that the Department 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 emergency preparedness.
- Provide public education about the importance of 72-hour emergency kits.

Accept

- Continue monitoring for signs of severe weather in McNab/Braeside, offering applicable services if an incident occurs.

Share

- Continue working with the authorities responsible for maintaining the critical infrastructure in McNab/Braeside in order to ensure all critical infrastructure remains in good working order.

Resources Needed

- Implementing this RTP will require the Department's time and resources.

Timeline

- The Department should begin incorporating the strategies in this RTP into its regular operations as soon as possible.

Financial Implications

- If there is a critical infrastructure failure that affects any of the systems owned by McNab/Braeside, the township may incur significant repair costs.
- Developing public education materials may have associated costs.

13.7 Fire/Explosion in Industrial Occupancy

Risk Level: Moderate

Risk Score: 64

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

- The Department responds to fires in industrial occupancies and provides exterior and interior fire suppression and rescue services as needed.
- If an incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid plan.

Administrative and Operational Risks, Concerns, and Observations

- McNab/Braeside contains 26 industrial occupancies that may potentially experience a fire, explosion, or hazardous materials spill. If one of those incidents occurs, the township may need to issue evacuation orders for some of its residents (depending on wind conditions and the incident's severity).
- The Department has not conducted a consistent number of industrial occupancy inspections.
- The Department has not completed the pre-incident planning process for all industrial occupancies in McNab/Braeside.

Determining Appropriate Fire Protection Services

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

Over the past five years, McNab/Braeside has not experienced a fire in an industrial occupancy. However, commercial occupancy fires represented 5 per cent of all dollar loss fires in Ontario between 2019 and 2022.

Due to the nature of the work performed at industrial sites, as well as the on-site equipment housed at those sites, industrial occupancies are at a heightened risk of a fire, explosion, or hazardous materials incident. Future incidents at the township's industrial occupancies are possible. As the Department does not inspect industrial occupancies regularly, it is possible that unknown hazards and risks exist.

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

The current treatment seems to meet the community's needs and expectations. However, given the lack of inspections, unknown hazards and risks may exist at industrial occupancies in McNab/Braeside.

Is the community capable of delivering the required services?

The Department can deliver the required suppression services for small-scale incidents. If a large-scale incident occurs and it exceeds the Department's capabilities or resources, the Department can request additional or specialized assistance through its mutual aid plan.

Is there a way to make the community safer?

The Department can inspect McNab/Braeside's industrial occupancies on a regular basis. In addition, the Department can complete the pre-incident planning process for all industrial occupancies in McNab/Braeside. Doing so will provide information that the Department can use to enhance the safety of building occupants and fire crews during emergencies. (However, it is important to note that if the Department wants to conduct more frequent inspections, it may not have the time or resources to complete those inspections on a regular basis.)

The Department can review the fire safety plans and the material safety data sheets for industrial occupancies in McNab/Braeside. Doing so will help the Department determine which resources it will need during emergency responses at those sites.

McNab/Braeside can establish a fire prevention policy that includes an inspection schedule regarding industrial occupancies. Council could also use the document to formalize specific components of the Department's operations.

Are there emerging risks that the Department cannot manage or is not managing?

The Department has not inspected the industrial occupancies in McNab/Braeside on a regular basis. As such, there may be unmanaged risks or emerging risks at those sites.

Recommended Risk Treatment Action and Strategy**Mitigate**

- Develop a fire prevention policy and ensure it includes an inspection schedule regarding industrial occupancies.
- Ensure the Department has the time and resources needed to inspect the industrial occupancies in McNab/Braeside on a regular basis.
- Complete the pre-incident planning process for all industrial occupancies in McNab/Braeside.

- Review the fire safety plans and the material safety data sheets for the industrial occupancies in McNab/Braeside.

Resources Needed

- Implementing this RTP will require the Department's time and resources.

Timeline

- The Department should begin incorporating the strategies in this RTP into its regular operations as soon as possible.

Financial Implications

- Implementing this RTP may impact the Department's operating budget if additional staff members or work hours are required to conduct inspections and complete the pre-incident planning process.

13.8 Wildland Fire

Risk Level: Low

Risk Score: 48

Applicable Community Profile

This risk was identified by the geographic profile, hazard profile, and past loss and event history profile.

Current Treatment, Capability, and Services Provided

- The Department responds to wildland fires and other outdoor fires.
- McNab/Braeside has an agreement with the MNRF regarding suppression services in specified areas of the township.
- If an incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid agreement and its agreement with the MNRF (depending on the location of the incident).
- McNab/Braeside has an open-air burning bylaw to regulate open-air burning and outdoor fires in the community.

Administrative and Operational Risks, Concerns, and Observations

- Some wildland fires can cause road closures.
- Some wildland fires could require McNab/Braeside to issue evacuation orders for affected areas.

Determining Appropriate Fire Protection Services

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

Over the past five years, the Department has responded to several open-air fires in McNab/Braeside. Those open-air fires did not result in dollar loss, but future open-air fires may become larger wildland fires.

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?

In most cases, the Department should have the capacity to deliver the required services.

If an incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid agreement and its agreement with the MNRF (depending on the location of the incident).

Is there a way to make the community safer?

The Department can continue providing public education about wildland/grass fires and open-air burning. Doing so may help reduce the number of calls the Department receives regarding outdoor fires. In order to reach a wide audience with its public education messages, the Department can use social media platforms and McNab/Braeside's official website to facilitate a public education program (such as FireSmart).

The Department can ensure that its personnel continue to receive training on responses to wildland fires.

Are there emerging risks that the Department cannot manage or is not managing?

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

Recommended Risk Treatment Action and Strategy**Mitigate**

- Continue providing public education about McNab/Braeside's open-air burning bylaw.
- Use McNab/Braeside's official website to provide public education about wildland fires.
- Use the Department's social media channels or McNab/Braeside's official website to facilitate a public education program (such as FireSmart).
- Ensure that the Department's personnel continue to receive wildland firefighting training from a recognized training provider.

Resources Needed

- Implementing this RTP will require the Department's time and resources.
- Preparing and distributing public education information will require resources.

Timeline

- The Department should begin incorporating the strategies in this RTP into its regular operations as soon as possible.

Financial Implications

- Developing public education materials may have associated costs.
- Additional training may have associated costs.

13.9 Fire in Commercial Occupancy

Risk Level: Low

Risk Score: 42

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

- The Department responds to fires in commercial occupancies and provides exterior and interior fire suppression services and rescue services as needed.
- If an incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid plan.

Administrative and Operational Risks, Concerns, and Observations

- There are 17 commercial occupancies in McNab/Braeside. Those occupancies may potentially experience a fire, explosion, or hazardous materials spill (depending on the materials those occupancies have on-site).
- There are several mixed-use occupancies in McNab/Braeside that contain both commercial businesses and residential units.
- Over the past five years, the Department has not inspected the commercial occupancies in McNab/Braeside on a regular basis, and no inspections took place during the COVID-19 pandemic.
- The Department has not completed the pre-incident planning process for all commercial occupancies in McNab/Braeside.

Determining Appropriate Fire Protection Services

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

Over the past five years, McNab/Braeside has not experienced a fire in a commercial occupancy. However, commercial occupancy fires represented 4 per cent of all dollar loss fires in Ontario between 2019 and 2022.

Due to variables like building use and on-site materials, the commercial occupancies in McNab/Braeside are at a heightened risk of experiencing a fire or other emergency in

the future.

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

The current treatment does not meet the community's needs and expectations (due to a lack of consistent building inspections).

Is the community capable of delivering the required services?

The Department can deliver the required services for small-scale incidents. If a large-scale incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid plan.

Is there a way to make the community safer?

The Department can inspect the commercial occupancies in McNab/Braeside on a regular basis in order to verify that their life safety systems remain functional.

The Department can complete the pre-incident planning process for the commercial occupancies in McNab/Braeside. Doing so will provide information that the Department can use to enhance the safety of building occupants and fire crews during emergencies.

The Department can review the fire safety plans and the material safety data sheets for the commercial occupancies in McNab/Braeside. Doing so will help the Department determine which resources it will need during emergency responses at those sites.

McNab/Braeside can establish a fire prevention policy that includes an inspection schedule regarding commercial occupancies. Council could also use the document to formalize specific components of the Department's operations.

Are there emerging risks that the Department cannot manage or is not managing?

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

Recommended Risk Treatment Action and Strategy**Mitigate**

- Develop a fire prevention policy and ensure it includes an inspection schedule regarding commercial occupancies.
- Ensure the Department has the time and resources needed to inspect the commercial occupancies in McNab/Braeside on a regular basis.
- Complete the pre-incident planning process for all applicable commercial occupancies in McNab/Braeside.
- Review the fire safety plans and the material safety data sheets for the commercial occupancies in McNab/Braeside (as applicable).

Resources Needed

- Implementing this RTP will require the Department's time and resources.

Timeline

- The Department should begin incorporating the strategies in this RTP into its regular operations as soon as possible.

Financial Implications

- If the Department can implement this RTP using its current staff and resources, there should be minimal financial impacts on the Department's operating budget.

13.10 Fire in Assembly Occupancy

Risk Level: Low

Risk Score: 39

Applicable Community Profile

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

Current Treatment, Capability, and Services Provided

- The Department responds to fires in assembly occupancies and provides exterior and interior fire suppression and rescue services as needed.
- If an incident occurs and it exceeds the Department's resources or capabilities, the Department can request additional or specialized assistance through its mutual aid plan.

Administrative and Operational Risks, Concerns, and Observations

- Some assembly occupancies have high occupant loads and on-site cooking facilities. Other facilities are permitted to serve alcohol during events. If a fire occurs, variables like these can increase the potential for injuries or death.
- The Department has not inspected all of the assembly occupancies in McNab/Braeside on a regular basis.
- The Department has not completed the pre-incident planning process for all of the assembly occupancies in McNab/Braeside.

Determining Appropriate Fire Protection Services

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

Over the past five years, McNab/Braeside has not experienced a fire in an assembly occupancy. However, assembly occupancy fires represented 2 per cent of all dollar loss fires in Ontario between 2019 and 2022.

Due to variables like building use and on-site materials, the assembly occupancies in McNab/Braeside are at a heightened risk of experiencing a fire or other emergency in the future.

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?

The Department can deliver the required services for small-scale incidents. If a large-scale incident occurs, the Department may need to request additional or specialized assistance through its mutual aid plan.

Is there a way to make the community safer?

The Department can inspect McNab/Braeside's assembly occupancies on a regular basis, prioritizing the buildings with high occupancy loads and other variables that heighten the risk of a fire or related incident occurring.

The Department can verify that all assembly occupancies in McNab/Braeside have functioning life safety systems (as applicable).

The Department can verify that all assembly occupancies in McNab/Braeside have a fire safety plan (as applicable). Additionally, the Department can verify that all supervisory staff working at the township's assembly occupancies understand their fire safety responsibilities (as applicable).

The Department can complete the pre-incident planning process for all assembly occupancies in McNab/Braeside. Doing so will provide information that the Department can use to enhance the safety of building occupants and fire crews during emergencies.

McNab/Braeside can establish a fire prevention policy that includes an inspection schedule regarding assembly occupancies. Council could also use the document to formalize specific components of the Department's operations.

Are there emerging risks that the Department cannot manage or is not managing?

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

Recommended Risk Treatment Action and Strategy**Mitigate**

- Develop a fire prevention policy and ensure it includes an inspection schedule regarding assembly occupancies.
- Inspect the assembly occupancies in McNab/Braeside on a regular basis.
- Verify that all assembly occupancies in McNab/Braeside have a fire safety plan (as applicable).
- Verify that all supervisory staff working at the assembly occupancies in McNab/Braeside understand their fire safety responsibilities (as applicable).
- Complete the pre-incident planning process for the assembly occupancies in McNab/Braeside.

Resources Needed

- Implementing this RTP will require the Department's time and resources.

Timeline

- The Department should begin incorporating the strategies in this RTP into its regular operations as soon as possible.

Financial Implications

- Implementing this RTP should not have a financial impact on the Department's operating budget.

Appendix A: List of Abbreviations

This community risk assessment uses the following acronyms and abbreviations.

CI:	critical infrastructure
Council:	Council of the Township of McNab/Braeside
CRA:	community risk assessment
Department, the:	McNab/Braeside Fire Department
E&R bylaw:	establishing and regulating bylaw
EMO:	Emergency Management Ontario
EOC:	emergency operations centre
FPPA:	Fire Protection and Prevention Act
HIRA:	hazard identification and risk assessment
LWC:	lightweight construction systems
NFBC:	National Farm Building Code
OBC:	Ontario Building Code
OFC:	Ontario Fire Code
OFM:	Ontario Fire Marshal
RTP:	risk treatment plan

Appendix B: References

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 Assessments
- Statistics Canada 2016 Census Profile
- Statistics Canada 2021 Census Profile

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: Copy of 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 systemsⁱ (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)ⁱⁱ.

Identifying the presence of lightweight construction where it is known to exist in a community's building stock is requiredⁱⁱⁱ 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

ⁱ 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.

ⁱⁱ 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.

ⁱⁱⁱ 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 Figure 1 as a table.

Table 46. Accessible data from Figure 1.

Type of Risk	Risk Score	Risk Level
Severe weather event	102	High
Road/highway emergency	96	High
Fire in residential occupancy	90	Moderate
Localized flooding	90	Moderate
Critical infrastructure failure	84	Moderate
Fire/explosion in industrial occupancy	64	Moderate
Wildland fire	48	Low
Fire in commercial occupancy	42	Low
Fire in assembly occupancy	39	Low