City of Dryden
Community Risk Assessment

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Executive Summary

The Dryden Fire Services (the Department) contracted The Loomex Group to conduct a community risk assessment (CRA) for the City of Dryden (the City). The project had the following objectives:

- identify and examine the City's public safety risks from a fire service perspective
- develop informed recommendations for ways the City can mitigate its identified risks

The Loomex Group developed the CRA per the guidelines of the Ontario Fire Marshal (OFM) and Ontario Regulation 378/18. As part of this adherence, The Loomex Group reviewed the nine community profiles that Ontario Regulation 378/18 stipulates must be examined when assessing public safety risks. In addition to the OFM guidelines and Ontario Regulation 378/18, The Loomex Group considered statistics specific to the City and held a series of engagement sessions with stakeholders from the City and the Department. Those statistics and meetings supplemented the information gained from the community profile reviews by adding valuable first-hand insights about the City's current and potential risks.

After reviewing the community profiles, The Loomex Group used a risk assessment tool to rank the City's issues, concerns, and risks. Once those hazards were ranked, The Loomex Group used the risk assessment tool to calculate the City's total risk assessment score. The following list presents the risks identified by the City's CRA. The list ranks the risks in order of severity based on the scores determined by the risk assessment tool.

1. Fire/Explosion in Industrial Occupancy (Risk Level: 162)
2. Wildland Fire (Risk Level: 132)
3. Fire in Vulnerable Occupancy (Risk Level: 104)
4. Weather Event (Risk Level: 102)
5. Fire in Residential Occupancy (Risk Level: 90)
6. Road and Highway Emergency (Risk Level: 90)
7. Fire in Commercial Occupancy (Risk Level: 85)
8. Rail Emergency (Risk Level: 84)
9. Airport Transportation Incident (Risk Level: 78)
10. Hazardous Materials Incident (Risk Level: 76)
11. Human Health Emergency (Risk Level: 72)
12. Critical Infrastructure Failure (Risk Level: 48)

13. Flooding (Risk Level: 48)

The final step of the CRA's development was creating a risk treatment plan (RTP) for each of the City's identified risks. The Loomex Group used the OFM Fire Safety Effectiveness Model, known as the "three lines of defence," as a guiding principle during the creation of the RTPs, as this model highlights the importance of recognizing the different options available for developing community fire safety. The finalized RTPs are included in this document. The City and the Department should review the RTPs and discuss options for implementing the RTP recommendations into their operations.

The Loomex Group has made every effort to ensure that the information contained in this CRA is accurate and complete. For the City to satisfy legislative requirements and ensure its risk treatment measures remain effective and up to date, it must redo the entire CRA process every five years.

1.0 Introduction

1.1 Community Risk Assessments: Context

Governing legislation defines risk as a measure of the likelihood and consequence of an adverse effect on health, property, organization, environment, or the community because of an event, activity, or operation. A CRA identifies the risks in a community and allows the local fire department to make informed decisions about the types and levels of fire protection services its community requires.

Once fire and life safety risks are identified, they are prioritized based on the following factors:

- the likelihood of the risks occurring
- the potential impact on the community if the risks occur

Fire departments use the information gained by prioritizing risks to determine the best method for managing the risks in their communities. A vital part of this process is the conducting of risk assessments.

Risk assessments assist fire departments in several ways:

1. The assessments help fire departments structure their levels of service.
2. The assessments help fire departments develop programs and activities for public fire safety education, fire code inspections, and enforcement initiatives.
3. The assessments help fire departments structure their emergency response capabilities to directly address the risks in their communities in ways that effectively mitigate them.

1.2 Approach and Methodology

The Loomex Group assembled a project team (Loomex Team) composed of experts from the Fire Service to conduct the City's CRA. Each team member has direct experience managing fire departments and is a recognized industry expert in their area of focus.

The Loomex Team's approach and methodology for developing the CRA included the following core components:

- background reviews of documents and maps
- direct observation of the City's environment and community
- engagement sessions with the Department's staff

These components gave the Loomex Team a first-hand perspective on the information used to identify the City's risks. From this, the Loomex Team ensured that all data it reviewed was accurate and applicable to the City's demographics.

While reviewing data is essential to developing an informed CRA, The Loomex Group believes that stakeholder engagement is also a crucial part of the process. Stakeholder engagement provides direct insights and perspectives about the client's community and ensures that the client's needs are heard and understood. In recognition of this fact, The Loomex Group prides itself on incorporating multiple engagement opportunities into a project's development. During this CRA's development, The Loomex Group met with the following stakeholders:

- the City's CAO
- the Department's Fire Chief
- the Department's Deputy Fire Chief
- the Department's Training Officer
- the Department's Fire Prevention Officer

The cumulative information The Loomex Group obtained from its reviews, assessments, and engagement sessions formed the basis of this CRA.

1.3 Summary of the Community Risk Assessment's Development

1.3.1 Development Phase 1

The Loomex Group developed the CRA according to the guidelines of the Ontario Fire Marshal (OFM) and Ontario Regulation 378/18. As per Ontario Regulation 378/18, the following nine community profiles must be reviewed when assessing community risk:

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

The Loomex Group reviewed the nine mandatory community profiles during the first stage of the CRA's development.

In addition to the nine community profiles, the Loomex Team reviewed statistics specific to the City. Those statistics included the following considerations:

- The City has a population of 7,388 residents.
- The City's population decreased by 4.7 per cent from 2016–2021 (a decrease of 361 residents).
- 23.9 per cent of the City's current population is over the age of 65.
- The City has seven vulnerable occupancies and one independent living residence for seniors. These occupancies require the Department to allocate significant time and resources to complete inspections. The Department must also ensure it attends and audits annual fire drills for these occupancies.
- A review of the City's past incidents and dollar loss over the last five years.
- A review of the inspections and violations within the City over the last five years.

The findings from the community profile reviews and client-specific considerations helped identify the hazards and risks present in the City.

During this stage of the CRA's development, the Loomex Team also held engagement sessions with Fire Chief Chris Wood, Deputy Chief Ryan Robertson, Fire Prevention Officer Bryce Hron, and Training Officer Devon Noel. The sessions with the Department's representatives enhanced the information gained from the community profile and statistical reviews by providing valuable insights about the City's risks and potential risks.

1.3.2 Development Phase 2

After reviewing the community profiles, The Loomex Group used a risk assessment tool to rank the City's issues, concerns, and risks. Once those hazards were ranked, The Loomex Group used the risk assessment tool to calculate the City's total risk assessment score. The Loomex Group then used the risk assessment score and the information from the community profiles to:

- determine if the Department is meeting the community's current expectations
- estimate whether the Department will be able to continue providing an appropriate level of service to the City in the future

The following list presents the risks identified by the City's CRA. The list ranks the risks in order of severity based on the scores determined by the risk assessment tool.

1. Fire/Explosion in Industrial Occupancy (Risk Level: 162)
2. Wildland Fire (Risk Level: 132)
3. Fire in Vulnerable Occupancy (Risk Level: 104)
4. Weather Event (Risk Level: 102)
5. Fire in Residential Occupancy (Risk Level: 90)
6. Road and Highway Emergency (Risk Level: 90)
7. Fire in Commercial Occupancy (Risk Level: 85)
8. Rail Emergency (Risk Level: 84)
9. Airport Transportation Incident (Risk Level: 78)
10. Hazardous Materials Incident (Risk Level: 76)
11. Human Health Emergency (Risk Level: 72)
12. Critical Infrastructure Failure (Risk Level: 48)
13. Flooding (Risk Level: 42).

Figure 1 illustrates the City's identified risks, ranked in order of their total risk score.

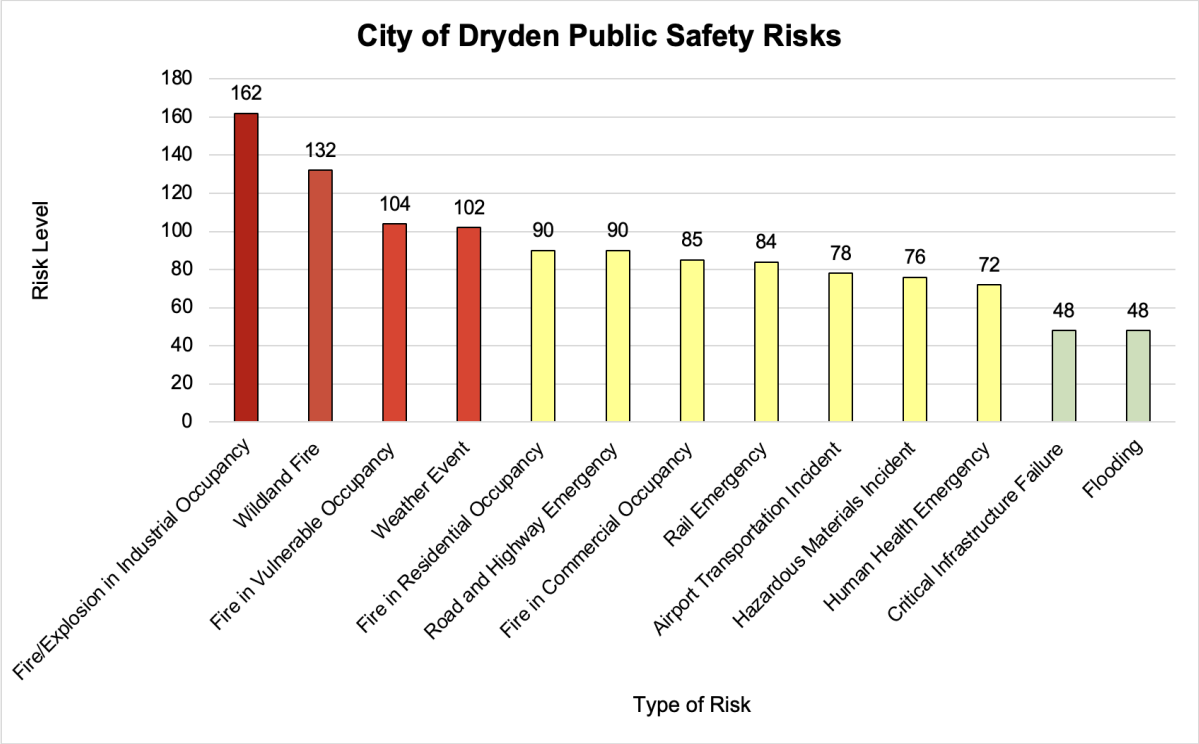

Figure 1: City of Dryden public safety risks.

1.3.3 Development Phase 3

The final stage of the CRA's development involved creating an RTP for each of the City's identified risks. The Loomex Group used the OFM Fire Safety Effectiveness Model, known as the "three lines of defence," as a guiding principle for developing the RTPs. The three lines of defence are public education and prevention, fire safety standards and enforcement, and emergency response. These three components involve the following measures:

1. Public education and prevention programs educate the community about how to be responsible for their life safety, such as by preventing fires.
2. Fire safety standards and enforcement programs ensure that all buildings have the required fire protection systems in place and that these systems are maintained to reduce the risk and potential severity of fires.
3. Emergency response programs ensure that fire departments have well-trained and equipped firefighters who can prevent injury or loss of life and stop the spread of fires. Emergency response is the failsafe when either prevention or code enforcement programs have failed.

Using the OFM's model is vital when creating RTPs because the three lines of defence emphasize the importance of recognizing the different options available for developing community fire safety.

Each RTP that The Loomex Group developed for the City focuses on a single risk and provides the appropriate action the City should take to manage that risk. The RTPs assign at least one of the following actions for each risk:

- avoid
- mitigate
- share
- transfer
- determine the acceptance of the risk

Along with the recommended action, each RTP includes a strategy for managing the identified risk.

After developing the RTPs, the Loomex Team began drafting the CRA document for the City.

2.0 Ranking Public Safety Risks

2.1 The Importance of Ranking Public Safety Risks

One of the most important steps of the CRA process is ranking public safety risks based on their likelihood of occurrence. Traditionally, fire departments and other emergency service providers rank a risk's occurrence as low, moderate, or high. The main benefit of ranking risks based on their likelihood is that communities and their emergency responders can prioritize and develop mitigation strategies for the threats they are most likely to face. And while best practices recommend giving priority to the risks deemed most likely to occur, it is vitally important for every community to ensure it develops mitigation strategies for all potential risks its CRA identifies. If a fire or emergency occurs, the consequences of not having taken steps to assess community risks can include the loss of life, the loss of property, and other adverse effects.

To effectively rank and prioritize a given risk, one must assess its likelihood and consequence levels. Once these variables are determined, emergency services providers can factor them together to produce an overall risk level.

2.2 Defining Likelihood and Consequence Levels of Public Safety Risks

Table 1: Likelihood levels of a risk occurring.

Likelihood	Specifics
Rare	• May occur in exceptional circumstances • No incidents in the past 15 years
Unlikely	• Could occur at some time if circumstances significantly change • Five to 15 years since the last incident
Possible	• Might occur under current circumstances • One incident in the past five years
Likely	• Will probably occur at some time under current circumstances • Multiple or recurring incidents in the past five years
Almost Certain	• Expected to occur in most situations, unless circumstances change • Multiple or recurring incidents in the past year

Table 2: Consequence levels of a risk after it occurs.

Consequence	Specifics
Insignificant	• No life safety issue • Limited value or no property loss • No impact on the local economy • No effect on general living conditions
Minor	• Potential risk to the life safety of residents • Minor property loss • Minimal disruption to business activity • Minimal impact on general living conditions
Moderate	• A threat to the life safety of residents • Moderate property loss • Poses a threat to small local businesses/could pose a threat to the quality of the environment
Major	• 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	• Significant loss of life • Property damage to a significant portion of the City • Long-term disruption of businesses, local employment, and tourism • Environmental damage resulting in the long-term evacuation of residents and businesses

2.3 The Risk Level Matrix

Figure 2 illustrates the risk level matrix The Loomex Group used to determine the City's level of community risk. The risk level matrix works by combining the factors of likelihood and consequence (as defined in Section 2.2) to calculate a total risk level.

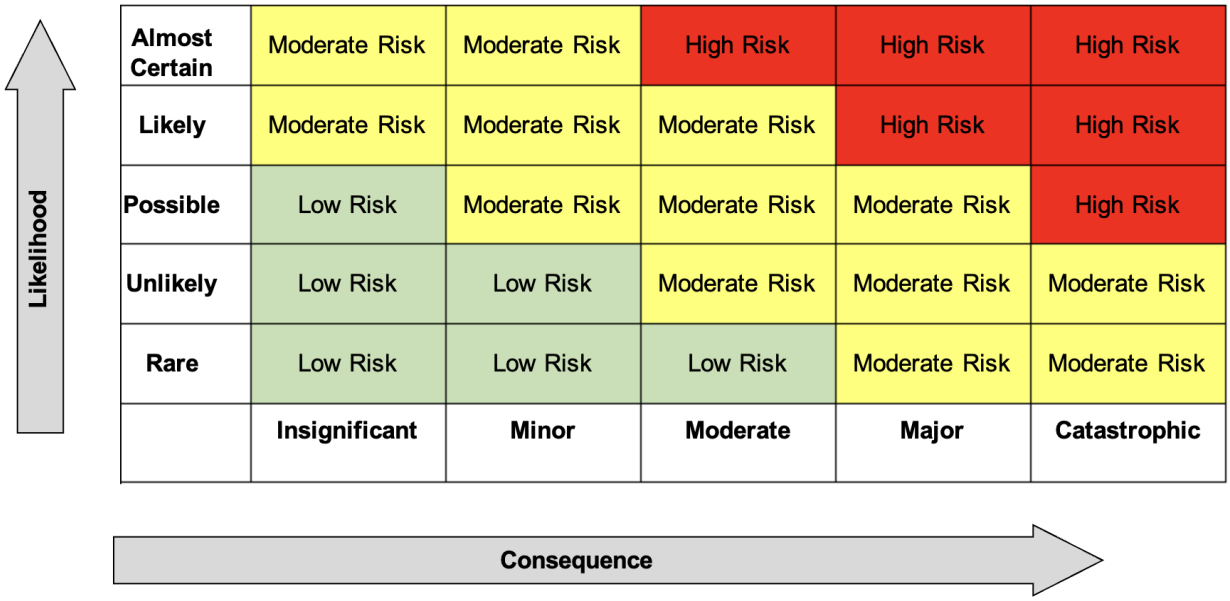

Figure 2: Risk level matrix.

3.0 Geographic Profile

3.1 Overview of a Geographic Profile

A geographic profile examines a community's physical features. Physical features are reviewed as part of a CRA because they may pose risk implications that could impact fire services access or response times.

The nature and placement of the following physical characteristics shape the content of a geographic profile:

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

3.2 Overview of the City of Dryden

The City of Dryden is a regional centre located along the Trans-Canada (Highway 17) mid-way between Thunder Bay, Ontario, and Winnipeg, Manitoba. It is the second largest city in the Kenora District of northwestern Ontario. Dryden is located at the intersection of Highway 17 and Highway 502.

Geographically, the City occupies a total land area of 66.19 square kilometres (Statistics Canada) and comprises the former Town of Dryden and the former Township of Barclay. Figure 3 shows a map of the City's location and boundaries.

Figure 3: The City's location and geographic boundaries (source: Google Maps).

According to the 2021 Statistics Canada Census, the City has a population of 7,388 residents. That number represents a decrease of 4.7 per cent from the 2016 census. The City of Dryden Official Plan anticipates growth by the 2031 planning horizon year to a population of 9,000 (City of Dryden Official Plan, 2012).

3.3 Risks Identified by the Geographic Profile

Table 3 summarizes the City's main geographic features and indicates if they impact the Department's delivery of fire services.

Table 3: Geographic profile: risk summary.

Geographic Feature	Training & Equipment Impact	Response & Travel Time Impact	Station Location Impact	Response Protocols Impact
Provincial highways	✓	✓	✓	✓
City road network	✓	✓	✓	✓
Private roads	✓	✓		✓
Bridges	✓			✓
Downtown core	✓		✓	✓
Lakes	✓	✓		✓
Rivers	✓	✓		✓
Dryden Regional Airport	✓	✓		✓
Railway lines	✓	✓	✓	✓
Forested areas	✓	✓		✓
Trans Canada pipeline	✓			✓
Superior Propane distribution	✓	✓	✓	✓

4.0 Demographic Profile

4.1 Overview of a Demographic Profile

A demographic profile examines a community's population based on the following factors:

- size
- distribution
- age
- gender
- cultural background
- education level
- socioeconomic makeup

When fire departments develop public safety education and prevention programs, implementation strategies, and other support resources, they must ensure they consider and respects the community demographics and target audiences this profile identifies.

4.2 Sources Used for the Demographic Profile

The information used to develop the demographic profile for the City's CRA is primarily from the 2016 Statistics Canada Census and the 2021 Statistics Canada Census. The Department provided supplementary information and resources as needed.

4.3 Population

According to the 2021 Statistics Canada Census, the City's population decreased from 7,749 to 7,388 residents during 2016–2021. This number represents a decrease of 4.7 per cent.

In addition to its core population, the City has a private school campus that brings transient residents to the area.

The City's total population density is 112.7 people per square kilometre, and its land area is 65.58 square kilometres.

4.4 Age Demographics and Age Distribution

Table 4 compares the age distribution in the City to the provincial average (based on the findings of the 2021 Statistics Canada Census). The table shows that the City's age demographic is skewed towards older age groups. This trend is due to the City's number of Baby Boomer generation residents and the high number of seniors living

facilities in the community. In total, 40.6 per cent of the City's population is over the age of 55, compared to the provincial average of 32.7 per cent.

Table 4: Age distribution in the City compared to the Province of Ontario.

Age Range	City of Dryden	Province of Ontario
0 to 14 years	13.7%	15.8%
15 to 64 years	62.4%	65.6%
55 years and over	40.6%	32.7%
65 years and over	23.9%	18.5%
85 years and over	2.9%	2.4%
Average Age	**45.4**	**41.8**
Median Age	**48.0**	**41.6**

4.5 Demographic and Cultural Considerations

There are two essential factors to consider when developing community services and programs: language and community culture.

In terms of language, the City is a predominantly English-speaking community, with 93.1 per cent of its population identifying as English-speaking. Only 6.5 per cent of the City's population is bilingual in both official languages, and less than 1 per cent speak a language other than English.

In terms of cultural considerations, a large portion of the City's residents is over the age of 55 – a figure that is 7.9 per cent higher than the provincial average. The combination of Baby Boomer generation residents and a high number of seniors in the community – living independently or in an assisted living facility – accounts for the City's higher percentage of older residents.

It is important for the City to note the number of its residents in the older age group demographics. Often, it is more challenging to introduce fire prevention messaging and education initiatives to older age groups because they have a set of established practices and beliefs and are unfamiliar with non-traditional methods of communication, such as social media. Nevertheless, the Department should look for ways to ensure that all City residents receive fire prevention messaging, as such measures help protect life safety. The Department must also ensure that it continues to complete all required inspections for the City's building stock.

4.6 Level of Education

Table 5 compares the level of education of the City's residents to the provincial average (based on the findings of the 2016 Statistics Canada Census).

Table 5: Education levels of City residents compared to the Province of Ontario.

Education Level	City of Dryden	Province of Ontario
No Certificate	21.9%	10.4%
High School	28.6%	24.5%
Some Post-secondary	49.5%	65.1%

4.7 Socioeconomic Makeup

As identified in the 2021 Statistics Canada Census, 67.7 per cent of the City's residents are above the low-income cut-off point. The 2016 census also shows the City has 4,310 residents over 15 years of age. In 2015, the total number of income recipients in the City aged 15 years and over was 3,620.

The City's 2020 median household income was $82,000. At that time, the provincial median for before-tax household income was $91,000. The number of low-income residents in the City, based on the low-income measure after-tax percentage, is as follows:

- 18 years to 64 years: 9 per cent
- 65 years and older: 11.1 per cent

During the same period, the City's unemployment rate was at 7.7 per cent compared to the provincial average of 7.4 per cent (as per the 2016 Statistics Canada Census).

4.8 Transient and Seasonal Population

Per its 2019 Community Improvement Plan (CIP), the City is known for its abundance of outdoor activities, which significantly contribute to tourism in the area. Those activities include fishing, boating, paddling, hunting, snowmobiling, ATV riding, mountain biking, and hiking. The City is also home to the annual Tbaytel Walleye Masters tournament.

Recreational facilities include the Dryden Recreational Complex (which includes two arenas, a swimming pool, a fitness centre, and a recreation office) as well as the Dryden Ski Club and skate park. The City also has 12 hotel/motel conference facilities and recreational camping, and these amenities draw a significant number of transient people. During emergencies, the City can provide lodging for Emergency Management Ontario.

4.9 Other Demographic Considerations

The following are additional demographic considerations pertaining to the City.

- The City has seven vulnerable occupancies. One of those occupancies is the hospital for the area, and another is a nursing home. Both of those occupancies require the Department to complete an annual inspection and fire drill audit.
- The City has five community and assisted living residences with residents that may require staff assistance to evacuate in the event of an emergency.
- The City has five licensed daycare centres.
- The City has six schools and one adult learning centre, each of which requires the Department to complete regular inspections. In addition to conducting regular inspections, the Department can look to deliver public education programs in the schools as a way to significantly enhance the life safety of students and staff. The schools are:
    - New Prospect Public School (grades JK to 8)
    - Open Roads Public School (grades JK to 8)
    - Dryden Public High School (grades 9 to 12)
    - St Joseph Catholic School (grades K to 8)
    - Ecole catholique de l'Enfant-Jesus (grades K to 8 French programs)
    - Confederation College Dryden campus
- The City has five seasonal residential camps with a capacity for up to 1,000 campers. Most of the camps have large congregate settings, such as dining halls and recreation buildings. Due to their design, these locations require regular inspections and the delivery of public education programs for campers and staff. Such measures will greatly enhance the life safety of the campsite occupants.

4.10 Risks Identified by the Demographic Profile

Table 6 summarizes the City's demographic groups and the fire and life safety risks they are most likely to face.

Table 6: Demographic profile: risk summary.

Demographic	Issues/Concerns
Seniors (40.6 per cent of the City's population is over the age of 55)	• Ensuring smoke and carbon monoxide alarms are working and maintained. • Physical concerns about members of this demographic having the ability to exit a building. • Education about fire safety and other emergencies (both this group's existing knowledge and the difficulty of providing new education to them). • The ability of seniors to make their homes fire-safe. • COVID-19 has impacted fire prevention/education programs.
Vulnerable Occupancies (The City has seven vulnerable occupancies [B2] and five community and assisted living residence buildings)	• Ensuring staff are trained in evacuation procedures. • Ensuring compliance with implementing duties as outlined in the fire safety plan. • Ensuring these facilities are following the Ontario Fire Code's requirements and meeting NFPA standards takes a great deal of the Department's time and resources.
Education (The City has six schools, one secondary school, and one adult learning centre)	• Ensuring compliance with implementing duties as outlined in the fire safety plan. • Education about fire safety and other emergencies. • COVID-19 has impacted fire prevention/education programs. • 21.9 per cent of the population does not have an education certificate.
Income	• Median household income is $9,000 lower than the provincial median household income. • The percentage of low-income residents between the ages of 18 and 64 represents 9 per cent of the City's population.

Demographic	Issues/Concerns
Seasonal/Transient Residents	• Seasonal residences may be remote, which makes delivering fire prevention/public education programs challenging. • When the 12 hotels/motels are at capacity, there are potentially high numbers of occupants. • Ensuring compliance with implementing duties as outlined in the fire safety plan. • Fire inspections and education for staff require the Department's time and resources. • COVID-19 has impacted fire prevention/education programs.

5.0 Economic Profile

5.1 Overview of an Economic Profile

An economic profile considers economic information from an overall public safety perspective by examining the following:

- the factors that influence a community's local economy
- the potential impact(s) a community would suffer by losing the factors that influence its economy
- the risks facing the industrial and commercial occupancies that provide significant economic production or jobs in a community

5.2 Economic Overview of the City of Dryden

The City is a hub for the northwest area, housing government services and commercial and industrial businesses. Notably, the Domtar Pulp Mill (Dryden Mill) supplies hundreds of jobs and greatly influences the City's economic standing.

5.3 Tourism

According to a report by McSweeney & Associates (2009), the City's tourism market includes the following:

- business travellers
- conference events
- sports events and spectators
- active outdoor travellers, specifically for the following activities:
    - wildlife viewing
    - hiking
    - paddling
    - fishing/hunting
    - cross-country skiing
    - horseback riding

5.4 Agriculture

The City does not have a large agricultural area, but it does contribute to the local economy. The City is home to 41 businesses that employ 104 people (Statistics Canada Business Register).

5.5 Businesses

The City of Dryden Official Plan includes a regional business centre land use designation along Highway 17/Government Street and Grand Trunk Avenue. This location serves as the primary employment centre in Dryden (second to the Dryden Mill) and has the greatest number of commercial and industrial uses of any area in the City. The area includes large-format retail uses, small- and mid-sized industrial uses, and tourist-oriented accommodations and services (City of Dryden CIP, 2019). This area includes big-box stores such as Wal-Mart and Canadian Tire, and it also houses some administrative offices for the Government of Ontario.

The City also has a downtown core area. Several commercial businesses operate in this area, including food, retail, and small shops.

5.6 Industrial Businesses

There are several industrial areas within the City that provide services and jobs in the area. One of the City's largest industrial businesses is the Dryden Mill. The mill has been operating in Dryden since 1913 and is the City's largest employer (City of Dryden Official Plan, 2012); the mill also generates many spin-off jobs.

The City's other main industrial business site is the area near the Highway 17 corridor, which is home to several small industrial businesses.

5.7 Risks Identified by the Economic Profile

Table 7 summarizes the risks associated with the City's economic profile based on information provided by the Department.

Table 7: Economic profile: risk summary.

Occupancy	Key Risk	Likelihood	Consequence	Risk Level
Dryden Mill	Fire/Explosion	Almost Certain	Major	High
Wildland	Fire	Almost Certain	Moderate	High
Vulnerable Occupancies	Fire	Possible	Moderate	Moderate
Schools	Fire	Unlikely	Moderate	Moderate
Commercial Occupancies	Fire/Explosion	Possible	Moderate	Moderate
Industrial Occupancies	Fire/Explosion	Possible	Moderate	Moderate

Occupancy	Key Risk	Likelihood	Consequence	Risk Level
Hotels/Motels	Fire	Unlikely	Moderate	Moderate
Residential Occupancies	Fire	Likely	Moderate	Moderate
Government Administration	Fire	Unlikely	Moderate	Moderate

6.0 Building Stock Profile

6.1 Overview of a Building Stock Profile

A building stock profile examines the types and numbers of building stock within a community. This profile looks at the number and age of buildings and their uses, as per major occupancy classifications in the Ontario Building Code (OBC). Reviewing a community's building stock and its importance to the community helps identify potential risk concerns. A review of this profile also helps provides information for developing programs and activities to address public safety risks such as fires, explosions, and structural failures.

6.2 Overview of the Building Stock in the City of Dryden

The Department and the City's Finance Department provided The Loomex Group with a list of the City's building stock as follows:

- Group A: 45
- Group B: 8
- Group C: 2,735
- Groups D & E: 90
- Group F: 56

A more detailed summary of the City's building stock is provided in Tables 11-16.

The City must ensure it has detailed building stock information when it comes time to perform the annual CRA review. Having the correct information will help ensure the CRA remains current. Additionally, the OFM requires all buildings constructed with lightweight construction (LWC) materials to be identified. Having this data provides additional information for developing community risk assessments. See Appendix B for a copy of Fire Marshal Directive 2022 – 001, which pertains to lightweight construction materials.

At the time of this CRA's development, The Loomex Group noted some concerns with the building stock data provided by Department and the Finance Department. In some cases, The Loomex Group was provided with conflicting information. The City must ensure that the record of its building stock is corrected (if necessary) and circulated to all relevant parties.

6.3 Residential Housing

According to the City of Dryden Municipal Property Assessment Profile provided by the Finance Department, the City's residential housing stock primarily consists of single-

family dwellings (a total of 2,483 dwellings).

Based on the 2021 Statistics Canada Census, the average value of a dwelling in the City is lower than the provincial average. According to the census, the average home value in the City was $225,600 compared to the Ontario average of $807,000. The Statistics Canada results also note that 25.1 per cent of the City's tenant households are subsidized housing.

Due to the number of buildings in the City constructed before the introduction of the OBC in 1975, there are major concerns about the risks of a fire occurring and causing significant damage. Buildings constructed before 1975 do not have the same life safety systems and equipment as buildings constructed after 1975 (when the OBC's requirements came into effect). The age and type of residential buildings (such as multi-residential dwellings, single-family dwellings, and town/row houses) and commercial buildings (such as industrial, retail, and commercial buildings) affect the likelihood and consequences of fire. As shown in Figure 4, it is estimated that over half of the City's dwellings were constructed before 1975.

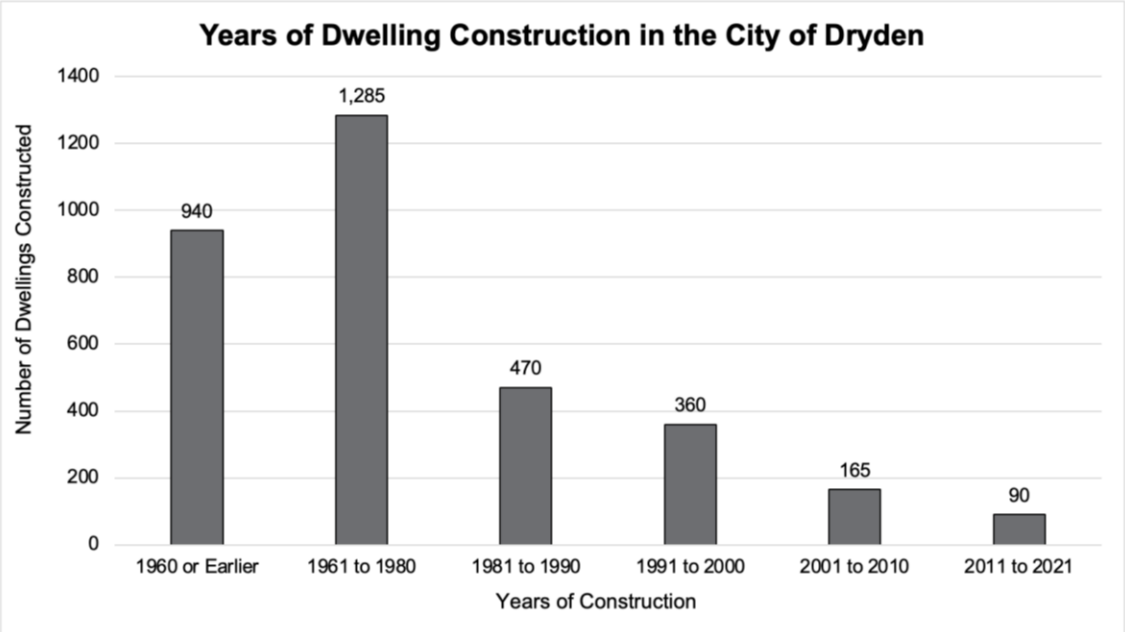

Figure 4: Years of dwelling construction in the City of Dryden.

6.4 Inspections

Ontario Regulation 365/13 – Mandatory Assessment of Complaints and Requests for Approval requires that fire safety assessments and inspections be undertaken (if necessary), as directed by the Fire Marshal, for the following:

1. Every building for which a fire safety complaint is received; and

2. Every building for which a request for assistance to comply with the Fire Code is received and the involvement of the Chief Fire Official is required.

Other regulations that govern the type and frequency of building inspections are as follows:

- Ontario Regulation 364/13, Mandatory Inspections – Fire Drill in Vulnerable Occupancy: This legislation requires that fire safety assessments, inspections, and fire drills be conducted on an annual basis
- Ontario Fire Code Section 2.8.2 – Occupancies that require a Fire Safety Plan: This legislation requires applicable occupancies to have a fire safety plan prepared, approved, and implemented in buildings and premises
- Ontario Fire Code Section 2.13 – installations of smoke alarms, and Section 2.16 – installations for carbon monoxide alarms: This legislation requires that a smoke/CO program (which includes inspections and enforcement) be in place

6.4.1 Inspection Statistics for the City of Dryden

Statistics pertaining to the inspections conducted in the City over the last five years are summarized as follows:

- Table 8 presents the number of inspections conducted from 2017 to 2021.
- Table 9 presents the reasons for the inspections conducted from 2017 to 2021.
- Table 10 presents the number of violations that were noted and the number of notices the Department issued from 2017 to 2021.

Table 8: Number of inspections by occupancy type (2017 to 2021).

Type of Occupancy	**2017**	**2018**	**2019**	**2020**	**2021**
Assembly (A)	N/A	N/A	3	4	17
Care, Treatment, and Detention (B)	N/A	N/A	4	8	5
Residential (C)	N/A	N/A	13	8	21
Mercantile/Commercial (D & E)	N/A	N/A	4	6	9
Industrial (F)	N/A	N/A	1	3	8
Other	N/A	N/A	0	0	0
Total Number of Inspections	**53**	**88**	**24**	**24**	**55**

Table 9: Reason for inspection (2017 to 2021).

Year	Complaint	Owner Request	Sale Request	Routine	Licensing	Totals
2017	8	6	0	36	3	53
2018	20	9	0	44	15	88
2019	9	4	0	6	5	24
2020	3	6	0	0	15	24
2021	12	9	0	14	20	55
Total	**52**	**34**	**0**	**100**	**58**	**244**

Table 10: Number of violations noted, and notices issued (2017 to 2021).

Year	Verbal	Letter	FSIR	Order	Total	Resolved
2017	0	0	59	2	61	Unknown
2018	0	0	71	0	71	Unknown
2019	0	0	14	1	15	Unknown
2020	0	1	13	3	16	Unknown
2021	0	0	1	49	50	46

6.5 Risks Identified by the Building Stock Profile

Tables 11 to 16 summarize the City's building stock and identify the associated fire and emergency issues/concerns for each occupancy type. The Loomex Group considered the following factors when identifying the issues and concerns for this profile:

- building use
- building density
- building height
- area
- historical or cultural significance

Table 11: Group A: assembly occupancy buildings.

Group A (45)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
Restaurants (10)	Currently unknown	• Grease fires/hood systems • Ensuring staff are trained in fire prevention, fire suppression, and emergency procedures • Ensuring proper maintenance of the life safety systems • Could be co-located with other occupancies • Regular inspections would assist to identify risks and hazards • Fire safety plans	Unlikely	Moderate	Moderate
Schools and Colleges (6)	Currently unknown	• Ensuring proper maintenance of the life safety systems • Ensuring supervisory staff are trained in emergency procedures • Regular inspections are required to identify risks and hazards • Fire safety plans	Unlikely	Moderate	Moderate
Theatres (1)	Currently unknown	• Ensuring proper maintenance of the life safety systems • Ensuring supervisory staff are trained in emergency procedures • Regular inspections are required to identify risks and hazards	Rare	Insignificant	Low

Group A (45)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
		• Fire safety plans			
Community Halls (2)	Currently unknown	• Ensuring occupant loads are not exceeded • Alcohol consumption • Careless cooking practices • Renters' knowledge of fire safety • Emergency instructions • Ensuring staff are trained in emergency procedures • Regular inspections are required to identify risks and hazards • Fire safety plans	Unlikely	Minor	Low
Arenas and Pools (2)	Currently unknown	• Emergency instructions • Ensuring staff are trained in emergency procedures • Regular inspections are required to identify risks and hazards • Large gatherings of people • Large buildings • Dangerous conditions/materials may be present, such as ammonia, carbon monoxide, and chlorine • Fire safety plan	Unlikely	Moderate	Moderate

Group A (45)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
Service Clubs (7)	Currently unknown	• Occupant load/emergency instructions • Retrofit of older buildings • Regular inspections are required to identify risks and hazards	Unlikely	Minor	Low
Libraries (1)	Currently unknown	• Combustible materials • Emergency signage • Ensuring staff are trained in emergency procedures • Regular inspections are required to identify risks and hazards	Unlikely	Major	Moderate
Funeral Homes (2)	Currently unknown	• Occupant loads • Ensuring staff are trained in emergency procedures • Public signage	Unlikely	Moderate	Moderate
Child Care Facilities (5)	Currently unknown	• Fire safety plan • Ensuring staff are trained in emergency procedures • Regular inspections are required to identify risks and hazards	Unlikely	Moderate	Moderate
Churches (9)	Currently unknown	• Occupant load • Retrofit of buildings • Open flames • Public signage and emergency	Unlikely	Minor	Low

Group A (45)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
		instructions • Regular inspections are required to identify risks and hazards			

Table 12: Group B: detention, care, and treatment buildings.

Group B (8)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
Care and Treatment B2 (2)	No information available	• Vulnerable occupants • Oxygen and chemical spills • Ensuring up-to-date staff training and fire safety plan • Staffing levels • Provincial mandate for the Department to conduct annual inspections and fire drill audits	Possible	Major	Moderate
Care B3 (5)	No information available	• Vulnerable occupants • Oxygen and chemical spills • Ensuring up-to-date staff training and fire safety plan • Staffing levels • Provincial mandate for the Department to conduct annual inspections and fire drill audits	Possible	Moderate	Moderate
Detention Occupancies B1 (1)	No information available	• People in cell block • Ammunition storage • Code compliance unknown	Rare	Minor	Low

Table 13: Group C: residential buildings.

Group C (2,735)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
Single-family Dwelling (2,483)	Currently unknown	• New developments use LWC • Number of homes built before 1975 • Ensuring smoke and carbon monoxide alarms are installed and maintained • Level of public education	Almost certain	Moderate	High
Semi Detached (68)	Currently unknown	• Ensuring proper fire separations • New developments use LWC • Number of homes built before 1975 • Ensuring smoke and carbon monoxide alarms are installed and maintained • Level of public education	Possible	Moderate	Moderate
Duplex (20)	Currently unknown	• Ensuring proper fire separations • Higher density living • New developments use LWC • Number of homes built before 1975 • Smoke and carbon monoxide alarms installed and maintained • Level of public education	Possible	Moderate	Moderate
Row Housing (8)	Currently unknown	• Ensuring proper fire separations • Multiple displaced persons • New developments use LWC • Number of homes built before 1975 • Ensuring smoke and carbon monoxide	Possible	Moderate	Moderate

Group C (2,735)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
		alarms are installed and maintained • Level of public education			
Mobile Homes (66)	No information available	• Ensuring smoke and carbon monoxide alarms are installed and maintained • Level of public education	Almost certain	Moderate	High
Multi-unit Residential (47)	Currently unknown	• New developments use LWC • Number of homes built before 1975 • Ensuring smoke and carbon monoxide alarms are installed and maintained • Level of public education • Regular inspections are required to identify risks and hazards	Possible	Moderate	Moderate
Mixed Occupancies with Residents (28)	Currently unknown	• New developments use LWC • Number of homes built before 1975 • Ensuring smoke and carbon monoxide alarms are installed and maintained • Level of public education • Regular inspections are required to identify risks and hazards	Possible	Moderate	Moderate
Hotel/Motels (12)	Currently unknown	• Possibly constructed before 1975 • May be used for long-term accommodation • Fire safety plans • Regular inspections are required to identify risks and hazards	Possible	Moderate	Moderate

Group C (2,735)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
Retirement Homes (3)	Currently unknown	• Many occupants have mobility issues • Fire safety plans • Retrofit (OFC 9.5) • Regular inspections are required to identify risks and hazards	Possible	Moderate	Moderate
Group Homes (2)	Currently unknown	• Ensuring staff are trained in fire prevention and evacuation procedures • Fire safety plans • Residents may need assistance during evacuations • Retrofit (OFC 9.5) • Regular inspections are required to identify risks	Unlikely	Minor	Low

Table 14: Groups D & E: business and personal service/mercantile buildings.

Groups D & E (90)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
Retail Lumber Yard (2)	Currently unknown	• Large fire load • Access routes • Regular inspections are required to identify risks and hazards	Unlikely	Major	Moderate
Retail Businesses (42)	Currently unknown	• Improper storage of flammable and combustible materials • LWC construction • Number of buildings constructed before 1975 • Regular inspections are required to identify risks and hazards	Possible	Moderate	Moderate
Retail Service Stations (7)	Currently unknown	• Underground tanks • Surface fires • Combustible fuels • Regular inspections are required to identify risks and hazards	Unlikely	Moderate	Moderate
Medical Facilities (6)	Currently unknown	• Occupants may have mobility issues • Oxygen supply • Regular inspections are required to identify risks and hazards	Unlikely	Moderate	Moderate

Groups D & E (90)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
Car Dealerships (5)	Currently unknown	• Oxy/acetylene gas • Refrigerants • Accumulation of combustible waste • Hot works • Regular inspections are required to identify risks and hazards	Unlikely	Moderate	Moderate
Grocery Stores (2)	Currently unknown	• High occupant load during peak times • Ensuring staff are trained in emergency procedures • Fire safety plan • Regular inspections are required to identify risks and hazards	Possible	Moderate	Moderate
Office Buildings (26)	Currently unknown	• Ensuring staff are trained in emergency procedures • Fire safety plan • Regular inspections are required to identify risks and hazards	Possible	Moderate	Moderate

Table 15: Group F: hazardous industrial buildings.

Group F (56)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
Industrial Properties (27)	Currently unknown	• Hazardous materials • Flammable and combustible materials • Lack of fire protection (not required by Fire Code) • Large buildings/design of buildings • Fire load • Number of building occupants • Regular inspections are required to identify risks and hazards	Almost certain	Catastrophic	High
Warehouses (19)	Currently unknown	• Large buildings • Large amounts of product on-site • Mixed chemical products • Combustible materials • Excessive fire load • Fire Code compliance is required	Unlikely	Moderate	Moderate
Vehicle Repair Shops (10)	Currently unknown	• Oxy/acetylene gas • Refrigerants • Accumulation of combustible waste • Hot works • Regular inspections are required to identify risks and hazards	Unlikely	Moderate	Moderate

Group F (56)	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
Large Fuel Storage (4)	Currently unknown	• Hazardous materials • Flammable and combustible materials • Fire load • Evacuation areas • Water supply • Regular inspections are required to identify risks and hazards	Possible	Major	Moderate
Fire Stations (2)	Currently unknown	• Regular inspections are required to identify risks and hazards	Rare	Minor	Low
Paramedic Stations (1)	Currently unknown	• Regular inspections are required to identify risks and hazards	Rare	Minor	Low

Table 16: Other occupancies or non-occupancies.

Other	LWC Buildings	Issues/Concerns	Likelihood	Consequence	Risk Level
Airport	Currently unknown	• Aircraft crashes • On-site fuel storage • Many hazards are associated with this type of occupancy • Fire Code compliance standing is unknown • Large building • Groups of passengers who are unfamiliar with the local surroundings • Regular inspections are required to identify risks and hazards	Possible	Moderate	Moderate
Forested Area	N/A	• Rural area • Water supply • Evacuations • Air quality • Wildland/urban interface	Likely	Minor	Moderate

7.0 Critical Infrastructure Profile

7.1 Overview of a Critical Infrastructure Profile

A critical infrastructure (CI) profile examines the capabilities and limitations of a community's critical infrastructure. CI facilities and services contribute to the interconnected networks, services, and systems that meet vital human needs, sustain the economy, and protect public safety and security. The most common factors assessed for this profile include the following:

- electricity distribution
- water distribution
- telecommunications
- hospitals
- critical buildings and services

The presence, availability, and capacity of CI can significantly impact factors such as:

- dispatch
- communications
- transportation
- suppression operations
- overall healthcare in a community

The presence, availability, and capacity of CI may also present unique risk concerns because of their size or design.

Reviewing critical infrastructure provides valuable information that municipalities can use when setting priorities and developing strategies for addressing risk concerns in their communities, such as public safety education, fire prevention, and emergency response pre-planning.

7.2 Risks Identified by the Critical Infrastructure Profile

Table 17 summarizes the City's CI and lists the fire and other emergency issues/concerns associated with each type. The table also includes general observations about the different types of CI, where applicable. The City's Fire Chief and ERP supplied the information for the table.

Table 17: Critical infrastructure profile: risk summary.

Critical Infrastructure	Issues/Concerns/Observations
Electricity Distribution	• Power outages have occurred yearly, but they usually have a short duration • Major power outages • Large transmission lines and towers for the distribution of hydro generation • Hydro One transmission centres • Distribution is mainly above ground
Water Distribution	• The City has a water distribution system in its urban area • Fire hydrants are located in the urban area • Water flow concerns in some areas of the City • Possibility of water main breaks or chemical spills • Boil water advisory • SCADA system malfunction
Wastewater Network	• The City provides wastewater services • Electrical fires • Rescue • Pumping station malfunction
Waste Site	• Hazardous materials incidents • Fires
Radio Communication	• Cell service is available in the City • Landlines are available in the City • Bell lines are above ground in most areas • Fire dispatch is in Kenora • Damage to tower sites
911 Communication	• Answered at Public Safety Answering Point (PSAP) • Landlines being damaged • Outages • Next Generation 911 Communications requires that civic addresses be assigned to residences that are water-access only, including those on islands. Furthermore, all islands must have registered names that identify them

Critical Infrastructure	Issues/Concerns/Observations
Municipal Buildings, Fire Stations, and Roads Department	• Two fire stations • Fuel pumps at the public works building • Several buildings at the public works yard • The City has a storage building next to a fire station in its urban area
Administration Building (City Hall)	• Site for Council meetings • Houses the City's day-to-day administrative functions • Storage of the City's records
Care Facilities	• Vulnerable people • Compressed gases • Biohazard • Doctors' offices (medical centres) in the area
Community Shelters	• Evacuation centres for emergencies • Will potentially operate for extended periods of time • Resources for large evacuation
CP Rail Lines	• Hazardous materials transported by rail • Transportation accident • Fires on railway property • Passenger train
Paramedic Station	• Dispatch centre is in the City of Kenora • No concerns
Transportation (provincial, county, and municipal roads and bridges)	• Transportation vehicle incidents • Local access to home, work, and recreation sites • Bridge closures • Long detours are possible
Private Roads	• Access to local properties • Road standards • Roadway maintenance (including winter maintenance)
OPP Station	• Possible people in cell block • Ammunition on-site

Critical Infrastructure	Issues/Concerns/Observations
Dryden Regional Airport	• Transportation accidents • Flight path over the City's rural area • Large building fires • Medical transportation

8.0 Community Services Profile

8.1 Overview of a Community Services Profile

A community services profile examines the types of services provided in a community by entities other than the fire department. The presence/absence of other service-providing entities may help dictate the types of emergencies to which the Department responds. Moreover, the service capabilities of these other entities may have the potential to assist the Department with mitigating the impacts caused by an emergency. These community services can also potentially reduce risks to public safety by providing a means of delivering public education and prevention programs.

8.2 Risks Identified by the Community Services Profile

Table 18 summarizes the community service entities that may be able to assist the Department when it is responding to an emergency and includes the issues/concerns associated with those entities.

Table 18: Community services profile: risk summary.

Agency	Assistance Provided	Issues/Concerns
Education School Boards	Schools are large assembly occupancies that can provide evacuation space and warming/cooling centres. Schools are essential locations for delivering fire and life safety education programs.	An agreement for the use of schools needs to be in place. Health emergencies (such as the COVID-19 pandemic) may interfere with access to schools.
Northwest Health Unit	The health unit provides vulnerable persons with access to public education. The health unit provides advice and services for firefighters exposed to harmful materials.	No issues.
Service Groups	Service groups may be able to provide meals and other necessities and assist in the operation of emergency shelters. Service groups run fundraisers to assist community interest groups, such as providing fire prevention resources for public distribution.	Health emergencies (such as the COVID-19 pandemic) may affect the availability of support services and programs.

Agency	Assistance Provided	Issues/Concerns
Faith-based Groups/Church Congregations	Non-secular groups may be able to provide meals and other necessities and assist in the operation of emergency shelters. Community churches may provide support for those who experience a loss caused by an incident.	Health emergencies (such as the COVID-19 pandemic) may affect the availability of support services and programs.
Red Cross	Red Cross services can be activated to support the community during a large-scale emergency. Once activated, the Red Cross may be able to assist with providing temporary shelter for someone that has experienced a fire in their residence.	Health emergencies (such as the COVID-19 pandemic) may affect the availability of support services and programs.

9.0 Public Safety Response Profile

9.1 Overview of a Public Safety Response Profile

A public safety response profile examines the types of incidents responded to by entities other than the Department and includes reviews of the response capabilities of those entities. The other entities examined in this profile are the public safety response agencies tasked with (or asked to help with) emergency responses. The most common examples of these agencies are police and paramedic services.

A public safety response profile can also contribute to an understanding of incident-related data. Data gathered from non-Department public safety response entities can provide insight into the Department's potential interdependencies, as well as the mutual benefit of establishing a tiered/joint response to a public safety risk or emergency. Finally, the data from this profile can also help identify risk treatment options based on shared responsibilities.

9.2 Common Types of Shared Services

The following subsections describe examples of common shared services and discuss their relation to the City/Department.

9.2.1 Fire Department Mutual Aid System

Mutual aid is an agreement between emergency responders. A mutual aid agreement stipulates how and the degree to which assistance from across jurisdictional boundaries will be rendered during an emergency. For example, an emergency may occur in a community (such as a disaster or a multiple-alarm fire), and the nature of that emergency may exceed the resource capabilities of the local emergency services responder/provider. If such an event occurs, the affected community can activate its mutual aid agreement and be lent assistance by the neighbouring emergency services entities. The Ontario Fire Marshal's Office approves of the concept of mutual aid agreements.

The Department is part of the Kenora District Mutual Aid Plan.

9.2.2 Automatic Aid and Fire Protection Service Agreements

Automatic aid programs are designed to ensure assistance from the closest available resource is available to provide support in the event of an emergency. Automatic aid agreements operate on a day-to-day basis, irrespective of municipal boundaries.

The Department currently has no automatic aid agreements.

9.2.3 Police Services

The Ontario Provincial Police provides service to the City's urban and rural areas. The OPP also provides service along Highway 17 and all other roadways within the City. The Canadian Pacific Railway Police Service provides policing for any incidents that occur on their rail lines.

9.2.4 Emergency Medical Services

Northwest Paramedic Services provides emergency medical services to Kenora District and the City's residents and visitors. There is a tiered response agreement between Northwest Paramedic Services and the Department that makes provisions for emergency medical care for the City's residents and visitors under the Medical Assist Response Program Agreement.

The Department will enact an emergency response following notification of a CACC committal or information from a call reporting any of the following conditions:

- vital signs absent
- unconscious patient
- airway obstruction
- absence of breathing
- all motor vehicle collisions (where required)

9.2.5 911 Public Emergency Reporting Service

The 911 Public Emergency Reporting Service provides civic address information to emergency responders.

911 calls are answered at the North Bay Public Safety Answering Point Communications Centre. The Ministry of Health and Long-Term Care's Central Ambulance Central Communications Centre (CACC) provides fire communications for the Department.

9.2.6 Roadway Maintenance Services

Winter and other road maintenance work are vital to the delivery of fire protection services.

The Province of Ontario (contractor) and the City of Dryden Works Department provide maintenance services for the City's roadways. The Department also has private roads at its disposal, but these roads are not maintained to any standards.

9.3 Risks Identified by the Public Safety Response Profile

Table 19 summarizes the City's public safety response agencies and the associated risks faced by the Department when its staff responds to an emergency.

Table 19: Public safety response entities profile: risk summary.

Response Agency	Incident Response	Role at Incident	Issues/Concerns
Ontario Provincial Police (OPP)	• Fires • Sudden deaths • Motor vehicle collisions	• Traffic control • Assist with investigations • Investigate motor vehicle collisions, sudden deaths, and criminal activity	No issues.
Ontario Fire Marshal Office (OFM)	• Fires/Explosions • Large-scale emergencies	• Investigate explosions and fires that meet the FPPA criteria • Assist police with investigations • Provide advice during a large-scale emergency, if needed • Provide limited equipment for large emergencies	Delayed response times.
Emergency Management Ontario (EMO)	• Large-scale emergencies • Declared emergencies	• Assist at the EOC • Advise on emergency management activities	Delayed response times.
Hydro One Power	• Fires • Downed wires • Electrical fires in transformer stations	• Isolate electrical services • Repair poles and electrical distribution equipment	Long response time for crews. Lengthy outages after weather events.
Technical Safety Standards Association (TSSA)	• Fires • Carbon monoxide emergencies • Elevator emergencies	• Assist with investigations • Provide training	Ensuring firefighters have awareness training for fuel or elevator incidents.

Response Agency	Incident Response	Role at Incident	Issues/Concerns
			Delayed response times.
Ministry of Natural Resources and Forestry	• Wildland fires • Flooding	• Provide firefighting and equipment in forested areas to assist with wildland fires • Provide flooding modelling • Control water flow	No issues.
Northwest Paramedic Services	• Fires • Motor vehicle collisions • Medical emergencies	• Provide treatment • Transport patients or firefighters to medical facilities • Monitor firefighter health at fire scenes	Delayed response times.
Ornge Paramedics	• Medical emergencies	• Provide treatment • Transport patients	No issues.
Ministry of Environment (MOE)	• Hazardous spills • Hazardous materials incidents response	• Order the cleanup of the spill site • Assist with controlling spills and releases of substances • Monitor the environment for signs of damage	No issues.
CP Rail Police	• Rail incidents, including spills and accidents	• Investigate rail incidents	Delayed response times.
Health Unit	• Domestic water incidents • Health investigations • Health emergencies	• Issue boiling water advisories • Assist with health issues • Provide response advice for health emergencies • Exposure investigations	No issues.

Response Agency	Incident Response	Role at Incident	Issues/Concerns
Ministry of Transportation (MTO)	• Fires • Motor vehicle collisions	• Road closures/detours • Winter operations • Road maintenance	No issues.
City of Dryden Public Works	• Fires • Motor vehicle collisions	• Road closures/detours • Winter operations • Road maintenance	No issues.

10.0 Past Events and Loss History Profile

10.1 Overview of a Past Events and Loss History Profile

A past events and loss history profile examines the emergency responses that have occurred in a community over the past five years. The profile includes two main components. The first component is an analysis of the number and types of emergency responses, injuries, deaths, and dollar losses over the last five years. The second component is an assessment of previous response data. By evaluating previous response data, circumstances and behaviours that may assist with making informed decisions about community fire services delivery can be identified.

10.2 Risks Identified by the Past Events and Loss History Profile

Tables 20–25 summarize the City's past events and loss history from 2017 to 2021.

Table 20: The City's 2017 fire loss frequency, deaths, injuries, and causes.

Occupancy	Fires	$ Loss	Injuries	Deaths	Causes
Group A	1	$1,000	0	0	Unavailable
Group B	0	$0	0	0	Unavailable
Group C	4	$326,000	0	0	Unavailable
Groups D & E	0	$0	0	0	Unavailable
Group F	5	$1,000	0	0	Unavailable
Other	3	$0	0	0	Unavailable
Totals	**13**	**$328,000**	**0**	**0**	

Table 21: The City's 2018 fire loss frequency, deaths, injuries, and causes.

Occupancy	Fires	$ Loss	Injuries	Deaths	Causes
Group A	0	$0	0	0	Unavailable
Group B	2	$0	0	0	Unavailable
Group C	5	$535,000	0	0	Unavailable
Groups D & E	0	$0	0	0	Unavailable
Group F	4	$0	0	0	Unavailable
Other	2	$60,000	0	0	Unavailable
Totals	**13**	**$595,000**	**0**	**0**	

Table 22: The City's 2019 fire loss frequency, deaths, injuries, and causes.

Occupancy	Fires	$ Loss	Injuries	Deaths	Causes
Group A	0	$0	0	0	Unavailable
Group B	0	$0	0	0	Unavailable
Group C	12	$645,000	0	0	Unavailable
Groups D & E	0	$0	0	0	Unavailable
Group F	0	$0	0	0	Unavailable
Other	3	$1,000	0	0	Unavailable
Totals	**15**	**$646,000**	**0**	**0**	

Table 23: The City's 2020 fire loss frequency, deaths, injuries, and causes.

Occupancy	Fires	$ Loss	Injuries	Deaths	Causes
Group A	0	$0	0	0	Unavailable
Group B	0	$0	0	0	Unavailable
Group C	9	$103,000	0	0	Unavailable
Groups D & E	2	$175,000	0	0	Unavailable
Group F	3	$0	0	0	Unavailable
Other	4	$160,000	0	0	Unavailable
Totals	**18**	**$438,000**	**0**	**0**	

Table 24: The City's 2021 fire loss frequency, deaths, injuries, and causes.

Occupancy	Fires	$ Loss	Injuries	Deaths	Causes
Group A	0	$0	0	0	Unavailable
Group B	0	$0	0	0	Unavailable
Group C	11	$2,150,000	0	1	Unavailable
Groups D & E	1	$250,000	0	0	Unavailable
Group F	1	$0	0	0	Unavailable
Other	4	$100,000	0	0	Unavailable
Totals	**17**	**$2,400,000**	**0**	**1**	

10.3 Department Statistics

Based on the information in its records, the Department made the following number of emergency responses from 2017 to 2021:

- 2017: 241 total responses
- 2018: 238 total responses
- 2019: 258 total responses
- 2020: 242 total responses
- 2021: 292 total responses

Figure 5 illustrates the types and frequency of emergency responses the Department made from 2017 to 2021.

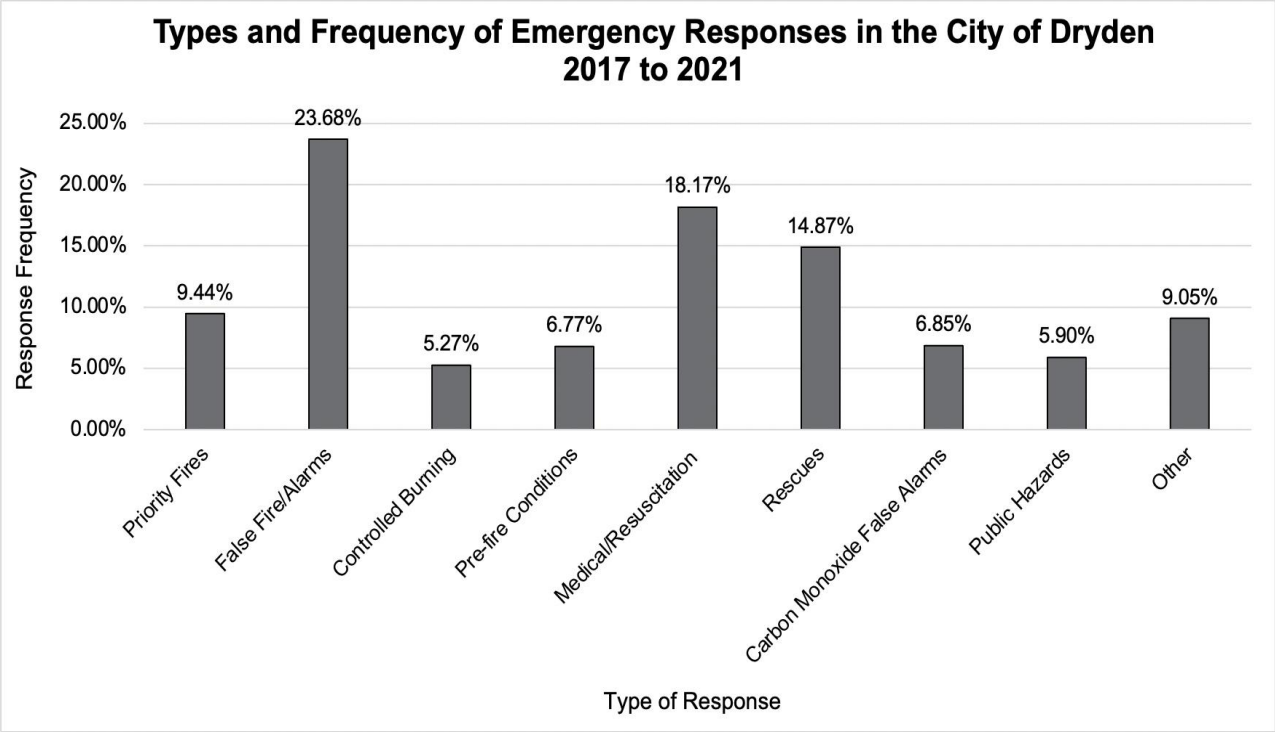

Figure 5: Types and frequency of emergency responses in the City for 2017 to 2021.

Table 25 summarizes the Department's fire responses from 2017 to 2021.

Table 25: The Department's fire responses (2017 to 2021).

Year	Loss Fires Structures	Loss Fires Other	Loss Fires Vehicles	No Loss Fires	Non-Fire Calls
2017	5	5	3	10	218
2018	7	4	2	9	216
2019	11	2	2	5	238
2020	10	4	4	10	214
2021	12	1	4	10	265

Table 26 summarizes the City's structure fire loss by property type.

Table 26: Structure fire loss in the City by property class (2017 to 2021).

Year	Class A	Class B	Class C	Classes D&E	Class F	Other	Yearly Loss
2017	$1,000	$0	$326,000	$0	$1,000	$0	$328,000.00
2018	$0	$0	$535,000	$0	$ 0	$60,000	$595,000.00
2019	$1,000	$0	$645,000	$0	$ 0	$0	$646,000.00
2020	$0	$0	$103,000	$175,000	$ 0	$160,000	$438,000.00
2021	$0	$0	$2,150,000	$250,000	$ 0	$0	$2,400,000.00
Total Loss							**$4,347,000.00**

10.4 Response Times

Fire departments calculate response times by combining both controllable and uncontrollable factors. For example, with improved technology and a fully compliant National Fire Protection Association (NFPA) communications service, the initial call to dispatch time is a controllable component. It is controllable because using technology can decrease the time involved during this part of a response. Conversely, the assembly time for a volunteer fire service is a non-controllable component because there is no guarantee about how many people will be on hand to respond to an emergency call or how close the people responding to the call will be to the emergency site. Travel time is another non-controllable component of response time because travel time is solely dependent upon the location of the call for service and the type of road network available to connect a responder to the emergency scene. Table 27 summarizes the main factors that affect response times.

Table 27: Factors that affect response time to the scene of an emergency.

Component of Response Time	Definition	Controllable or Non-Controllable
Initial Call to Dispatch Time	The time interval during which a call is received by the dispatch center to the time the notification is sent to the fire station.	Controllable.
Assembly Time	The time interval during which a fire station is notified of an emergency call to the time the responding vehicle leaves the fire station.	Non-controllable.
Travel Time	The time interval during which a responding vehicle leaves the fire station to the time it arrives on scene at the emergency.	Non-controllable.
On-Scene Time	Total time after all controllable and non-controllable components are added together.	Both controllable and non-controllable factors.

In large urban centers with full-time firefighters and multiple stations, response times are frequently in the range of 5 to 8 minutes. In rural areas, response times are often 10 to 20 minutes, depending on factors such as the size of the municipality, the number and location of fire stations, and the type of available road networks.

It is important for fire departments to know their response times because a fire's growth is heat-generated and is dependent upon fuel and air supply. Once the temperature in a room ablaze reaches approximately 1000^{o} F (590^{o} C), a flashover will occur in the room within 6-10 minutes (or less). Since the risk of loss of life and property significantly increases following a flashover, the sooner the responding fire department can begin fire suppression, the greater the chance for the firefighters to protect endangered lives and property. Appropriate response time and firefighter intervention help increase the chance for any endangered lives to be rescued and fire control to improve before a flashover occurs.

The time/temperature curve chart shown in Figure 6 illustrates the growth rate of fire over time and further emphasizes the importance of tracking and knowing response times.

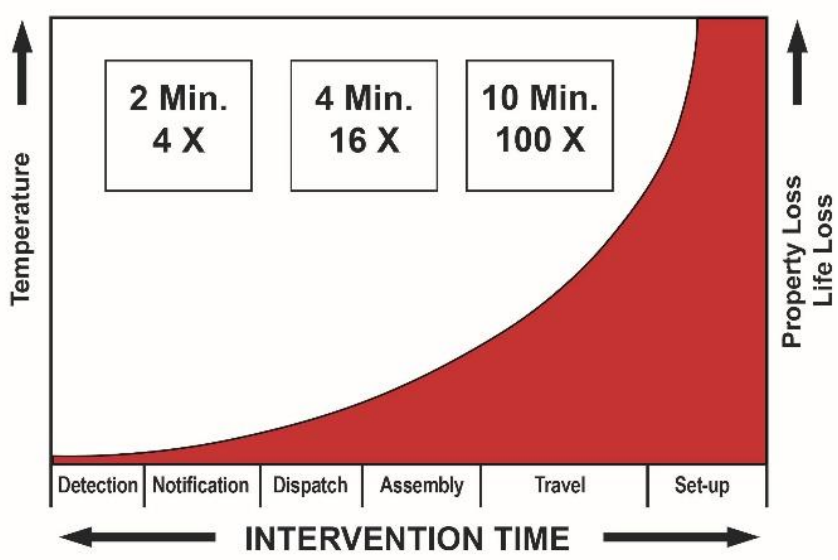

Figure 6: Growth of a fire over time.

Based on an analysis of its response times from 2017 to 2021, the Department's average response time for report fires was as follows.

Station 1 Average Response Times

- 2017: 08:40 minutes
- 2018: 07:55 minutes
- 2019: 08:35 minutes
- 2020: 09:07 minutes
- 2021: 08:46 minutes

Station 2 Average Response Times

- 2017: 13:34 minutes
- 2018: 00:00 minutes
- 2019: 10:36 minutes
- 2020: 11:31 minutes
- 2021: 07:00 minutes

10.5 Resource Deployment

Determining the number of firefighters that are required for adequate resource deployment has been an ongoing concern for municipalities for many years.

In recent years, the provincial government has influenced the decision-making process for fire department staffing through the Occupational Health and Safety Act (OHSA) and the Fire Protection and Prevention Act. Under the former, the employer (the City and Council) is responsible for protecting employees from workplace injuries or death, providing employee training, and providing competent supervisors. Adhering to legislative requirements such as these is the first step a fire department must take when it makes any staffing decisions.

Another resource that can help a fire department determine the appropriate number of staff is the effective fireground staffing model (EFSM). The Office of the Fire Marshal developed the EFSM in the 1990s as part of a comprehensive fire safety model that identified seven sub-models which directly impact fire protection. This model is shown in Figure 7. The EFSM has proven to be a valuable tool for helping fire departments determine staffing and resource levels/deployment, and it is now widely used across Ontario.

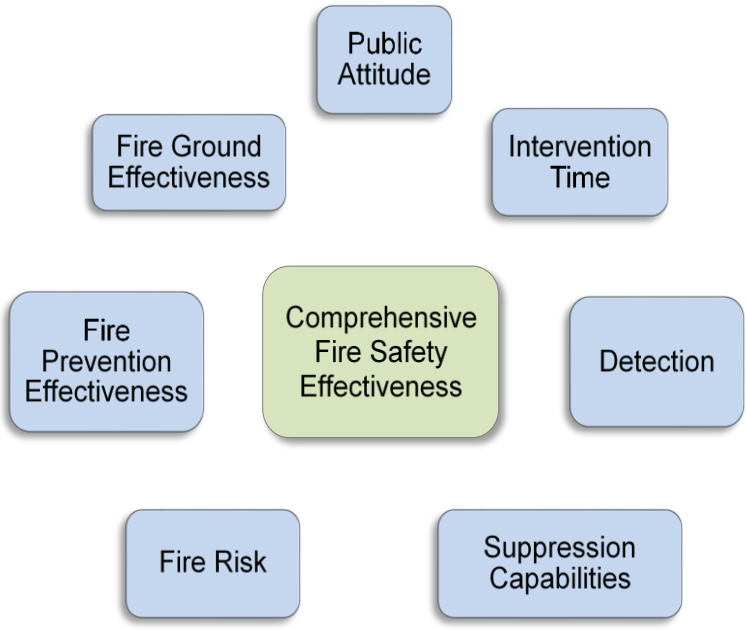

Figure 7: Components of the Fire Safety Effectiveness Model.

Table 28 applies the method of the EFSM and outlines the minimum number of firefighters that are required to perform the critical tasks at a fire in a single-family home.

Table 28: Example of using the EFSM for a fire in a single-family home.

Critical Tasks	# Of Firefighters Required
Incident Commander	1
First Arriving Pump Operator	1
Fire Attack Sector	2
Search & Rescue	2
Support and Backup	2
Ground Ladder/Ventilation	2
First Arriving Ladder or Second Arriving Pump Operator	1
Rapid Intervention Team	2
Total	**13**

Table 29 expands upon the critical tasks listed above and outlines the number of additional firefighters that are required to provide water supply for a fire in a non-hydrant area.

Table 29: Additional firefighters required to provide water in non-hydrant areas.

Critical Tasks	# Of Firefighters Required
Water Supply	4
Water Fill	2
Total	**6**

11.0 Community Comparison

11.1 Community Comparison: Context

Ontario Regulation 378/18 came into effect in July 2019. This regulation stipulates that every municipality in the province must complete a community risk assessment, and the risk assessment component of the CRA must be completed no later than July 1, 2024.

11.2 City of Dryden Community Comparison

Currently, there is not enough information available to conduct a thorough community comparison of the City. However, because Ontario Regulation 378/18 requires a municipality to review its CRA annually, this section of the document can be updated at a later date.

12.0 Hazards Profile

12.1 Overview of a Hazards Profile

A hazards profile examines a community's hazards, including natural hazards and those caused by humans and technology. The three components of a hazards profile are likelihood scoring, consequence scoring, and total risk scoring.

12.2 Hazard Profile Summary for the City of Dryden

The first component of a hazards profile is a determination of likelihood. Likelihood levels are determined by thoroughly examining the results of the other community profiles that are reviewed as part of a CRA's development, particularly the past events and loss history profile.

Based on the results of the other community profiles reviewed during this CRA's development and consultations with the Department's Fire Chief and Deputy Fire Chief, the City's top-five risks (from a fire services perspective) are:

1. Fire/Explosion in Industrial Occupancy
2. Wildland Fire
3. Fire in Vulnerable Occupancy
4. Weather Event
5. Fire in Residential Occupancy

It is important for the Department to note that should any of these hazards occur, it may be expected to respond.

The next factor that must be considered in a hazards profile is consequence scoring. Consequence scoring is based on the following eight categories:

1. Life safety
2. Evacuation
3. Psychosocial
4. Property damage
5. Critical infrastructure
6. Environmental
7. Economic
8. Reputational/legal

The final component of a hazards profile is total risk scoring. Total risk scoring is

determined by multiplying a hazard's likelihood score by its consequence score. Appendix D contains the risk scoring methodology used to determine the City's risks.

12.3 Risks Identified by the Hazards Profile

Table 30 summarizes the City's risk assessment from a fire services perspective. The table includes the definition and threat posed by each identified risk. The information in this table is based on the methodology found in Appendix D.

Table 30: Hazards profile: risk summary.

Hazard	Definition/Threat	Risk Total (L x C)	Level of Risk
Fire/Explosion in Industrial Occupancy	• The City's economy would experience a large loss if the Dryden Mill's operations were destroyed. • The Department has responded to the Dryden Mill several times in the last few years due to reported fires. • The City's largest employer (Dryden Mill) provides many jobs, not including spin-off jobs. • The City currently has 27 industrial operations and buildings, and these locations may have the potential for an explosion or small hazardous materials spill.	162	Extreme
Wildland Fires	• Smoke from the City's large, forested area has created smoke issues in the past. • Some wildland fires may cause highway closures. • The City may become a transportation hub during wildfire season, which will bring hundreds of additional people to the area. • The City's urban/wildland interface may cause structural and CI damage.	132	Very High
Fire in Vulnerable Occupancies	• Evacuation procedures could be a challenge for larger occupancies. • A fire prevention policy that outlines how frequently the Department needs to conduct inspections is required but is not currently in place.	104	High

Hazard	Definition/Threat	Risk Total (L x C)	Level of Risk
	• There may be challenges ensuring that the Department is trained to meet the service level expected for these types of emergencies.		
Weather Events	• Accessibility around the City and its surrounding area may be a challenge during weather events. • The Department may need to implement initiatives about safe practices for heating and other fire risks associated with severe weather events to increase public education/awareness of these topics. • The City's residents may not have a 72-hour emergency kit. • History has shown that heavy snows, ice storms, and high-wind events occur in the area with some regularity. • Climate change is influencing weather events during all seasons.	102	High
Fire in Residential Occupancies	• There may be challenges ensuring that the Department can complete the required inspections needed to verify the City's multi-residential occupancies meet code compliance and the necessary safety planning. • The City has experienced several fires in mobile homes in recent years. • A large portion of the City's buildings were built before the introduction of the Ontario Building Code.	90	Moderate
Road and Highway Emergency	• The Department needs to ensure it has a training plan/program in place for responding to incidents involving buses and large trucks. • The City experiences a high volume of traffic on its roads and the nearby provincial highways. • Unknown materials may be transported through the City, including hazardous materials.	90	Moderate

Hazard	Definition/Threat	Risk Total (L x C)	Level of Risk
	• The Department may need to respond outside the City to assist other fire departments with motor vehicle accidents.		
Fire in Commercial Occupancy	• A comprehensive fire safety inspection program is required. • There are commercial buildings in the City that may have the potential for an explosion or small hazardous materials spill occurring. • Pre-planning of the City's commercial occupancies needs to be conducted: this is required to ensure the safety of firefighters is protected when they respond to incidents at these locations. • Inspections for this type of occupancy require the Department's time and resources.	85	Moderate
Rail Emergency	• A rail emergency may cause the closure of Highway 17 and cause traffic concerns in the area. • Fires and derailments may cause long-lasting environmental issues. • Vulnerable occupancies are close to rail lines, and if a derailment occurs, evacuation may be needed. • It could be challenging for the Department to respond to this type of incident because a train derailment or stoppage may cause access issues to some parts of the City, including large business areas.	84	Moderate
Transportation Incident at Airport	• This type of occupancy may have the potential for a fire/explosion or small hazardous materials spill. • The Department needs to complete pre-planning for this type of occupancy. The pre-planning is required to ensure the safety of firefighters is protected when they respond to incidents at these locations.	78	Moderate

Hazard	Definition/Threat	Risk Total (L x C)	Level of Risk
Hazardous Materials Incident	• Depending on where they are located, it may take considerable time before a responding agency can arrive on the scene of an emergency. • Because of the risks involved with hazardous materials, the City's establishing and regulating bylaw needs to specify what is expected of the Department when it responds to these types of incidents. • The Department needs to review the fire safety plans and material safety data sheets for any commercial/industrial occupancies to determine what level of emergency response is required at those locations. • Adequate time and resources for conducting inspections and pre-planning for these incidents must be given. Inspections and pre-planning are required to ensure the Department can perform the actions needed to keep the City's residents safe. • Ensure that the firefighters are trained and equipped to perform the expectation of the residence and the commercial/industrial occupancies that they service.	76	Moderate
Human Health Emergency	• Firefighters are exposed to viruses. • There may be limited staff availability for a response. • Providing PPE and vaccines (if available) may be required. • The Department must ensure it is trained to meet the service demands expected by the community.	72	Moderate
Critical Infrastructure Failure	• It may take time for the responding authorities to arrive at the scene of an emergency. • The Department will need to ensure its firefighters are trained to recognize the risks these types of incidents pose and the safety	48	Low

Hazard	Definition/Threat	Risk Total (L x C)	Level of Risk
	precautions that are needed when responding. • Lengthy power outages can severely affect the City's vulnerable occupancies and public services. • The Department should ensure it provides an adequate level of public education about the importance of having a 72-hour emergency kit.		
Flooding	• The Department requires training related to flood response. As part of the training, the relationship between all responding partners may need to be clarified. • The City must ensure its firefighters are trained to meet the expectations of the level of service that the Department can provide. • Residents who have houses in flood zones require public education about the dangers posed by floods. • Climate change can affect flooding frequency. • In 2021, the water level at the Dryden Mill's dam was the biggest unknown flooding factor the Department had to manage. During that time, the Fire Chief was concerned about the integrity of the dam becoming compromised.	48	Low

13.0 Risk Assessment to Risk Treatment

13.1 Addressing Public Safety Risks

There are many ways to address risk. This CRA recommends addressing a given risk by using at least one of the following five options:

1. Avoid: eliminate the hazard.
2. Mitigate: reduce the likelihood or impact of the risk.
3. Accept: take no action.
4. Transfer: transfer the risk to another party.
5. Share: transfer part of the risk's ownership to another party.

These options lead to strategies that may include developing policies/procedures, training, service delivery agreements, resource allocation, and service level changes. This CRA has assigned at least one of the five preceding options as part of the RTP created for each risk identified in the City. The Department should use the RTPs to guide the development and establishment of programs and services that can help mitigate the potential impacts of the identified risks.

13.2 Risks to Public Safety: Hazards in the City of Dryden

Table 31 summarizes the frequency and consequence scores for all hazards assessed while developing the City's CRA. Each hazard's overall risk level is calculated by multiplying its likelihood score by its consequence score. If total scores (L x C) are used, the following categories may be used to organize the results:

- Score of 0: N/A
- Score of 1 – 30: Very Low
- Score of 31 – 60: Low
- Score of 61 – 90: Moderate
- Score of 91 – 120: High
- Score of 121 – 150: Very High
- Score of 151 – 180: Extreme

The subsections that follow Table 31 summarize the City's hazards and include the hazards' risk levels and any applicable administrative/operational issues or concerns. The information in these tables is based on results that were obtained by using the risk-scoring methodology found in Appendix D.

Table 31: List of the City's risks and their total risk score.

Risk	Likelihood Score	Life Safety	Evacuation	Psychosocial	Property Damage	Critical Infrastructure	Environmental	Economic	Reputational	Score	Risk Total (Likelihood x Consequence)	Level of Risk
Fire/Explosion in Industrial Occupancy	6	High (9)	Moderate (2)	High (3)	Moderate (2)	Medium (2)	High (3)	High (3)	High (3)	27	162	Extreme
Wildland Fire	6	Moderate (6)	High (3)	Moderate (2)	High (3)	High (3)	Moderate (2)	Moderate (2)	Low (1)	22	132	Very High
Fire in Vulnerable Occupancy	4	High (9)	High (3)	High (3)	Moderate (2)	High (3)	Low (1)	High (3)	Moderate (2)	26	104	High
Weather Event	6	Moderate (6)	Low (1)	Low (1)	Moderate (2	High (3)	Low (1)	Moderate (2)	Low (1)	17	102	High
Fire in Residential Occupancy	6	Moderate (6)	Moderate (2)	low (1)	Moderate (2)	Low (1)	Low (1)	Low (1)	Low (1)	15	90	Moderate
Road/Highway Emergency	6	Moderate (6)	Low (1)	Low (1)	Low (1)	Moderate (2)	Moderate (2)	Moderate (1)	Low (1)	15	90	Moderate
Fire in Commercial Occupancy	5	Moderate (6)	Moderate (2)	Low (1)	Moderate (2)	Low (1)	Moderate (2)	Moderate (2)	Low (1)	17	85	Moderate
Rail Emergency	4	Moderate (6)	High (3)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	21	84	Moderate
Airport Transportation Incident	6	Moderate (6)	Low (1)	Moderate (2)	Low (1)	Low (1)	Low (1)	Low (1)	Low (1)	13	78	Moderate
Hazardous Materials Incident	4	Moderate (6)	Moderate (2)	Low (1)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	Moderate (2)	19	76	Moderate
Human Health Emergency	4	High (9)	moderate (2)	High (3)	None (0)	Low (1)	None (0)	High (3)	Low (0)	18	72	Moderate
Critical Infrastructure Failure	6	Low (3)	Low (1)	Low (1)	Low (1)	Moderate (2)	Low (1)	Moderate (2)	Low (1)	12	48	Low
Flooding	4	Low (3)	Low (1)	Low (1)	Moderate (2)	Moderate (2)	Low (1)	Low (1)	Low (1)	12	48	Low

66

13.2.1 Risk Overview: Fire/Explosion in Industrial Occupancy

Risk Level: Extreme

Risk Score: 162

Current Treatment, Capability, and Services Provided:

- The Department provides structural firefighting services.
- The Department provides interior fire rescue services.
- Under Ontario's provincial legislature, the Department must conduct annual fire inspections for industrial occupancies.
- The Department is currently in the process of attaining certification from the Ontario Fire Marshal's Office to NFPA 1001 Level I and Level II and Hazardous Materials NFPA 1072.
- The City's largest industrial employer has an emergency response team to provide responses to industrial occupancies; the City supports the employer's response team operations where possible.

Administrative and Operational Risks/Concerns/Observations:

- The City currently has 27 industrial operations and buildings, and these locations may have the potential for an explosion or small hazardous materials spill.
- The Department needs to pre-plan the City's industrial occupancies: this is to ensure that firefighter safety is protected when they respond to incidents at these locations.
- Inspections for this type of occupancy require the Department's time and resources.
- The City's largest employer (Dryden Mill) provides many jobs, not including spin-off jobs.
- The Department has responded to Dryden Mill several times in the last few years due to report fires.
- The City's economy would experience a large loss if the Dryden Mill's operations were destroyed.

13.2.2 Risk Overview: Wildland Fire

Risk Level: Very High

Risk Score: 132

Current Treatment, Capability, and Services Provided:

- The Department currently responds to fires in remote areas and to fires in other wildland areas.
- The City has an agreement with the Ministry of Natural Resources for wildland fire coverage.
- The Ministry of Natural Resources has a regional command centre and resources at Dryden Regional Airport.
- The City has provisions in place for mutual aid to be activated, if needed.
- The Department is currently in the process of attaining certification from the Ontario Fire Marshal's Office to NFPA 1001 Level I and Level II and Hazardous Materials NFPA 472.

Administrative and Operational Risks/Concerns/Observations:

- The City should educate the public about its burning bylaw to mitigate instances of open-air burning and thereby reduce fire crews being called to control and extinguish improper open-air burning that may result in a wildland fire.
- Smoke from the City's large, forested area has created smoke issues in the past.
- The City may become a transportation hub during wildfire season, which will bring hundreds of additional people to the area.
- Some wildland fires may cause highway closures.

13.2.3 Risk Overview: Fire in Vulnerable Occupancy

Risk Level: High

Risk Score: 104

Current Treatment, Capability, and Services Provided:

- The Department provides structural firefighting services.
- The Department provides interior fire rescue services.
- Under Ontario's provincial legislature, the Department must conduct annual fire inspections and witness fire drills at the City's vulnerable occupancies. Once those tasks are completed, the Department must forward a report to the Fire Marshal.
- The Department is currently in the process of attaining certification from the Ontario Fire Marshal's Office to NFPA 1001 Level I and Level II and Hazardous Materials NFPA 472.

Administrative and Operational Risks/Concerns/Observations:

- There may be challenges ensuring that the Department is trained to meet the service level expected for these types of emergencies.
- There may be challenges ensuring the Department documents all inspections and violations.
- Inspecting and pre-planning these types of occupancies requires the Department's time and resources.
- Evacuation procedures could be a challenge for larger occupancies.
- A fire prevention policy that outlines how frequently the Department needs to conduct inspections is required but is not currently in place.

13.2.4 Risk Overview: Weather Event

Risk Level: High

Risk Score: 102

Current Treatment, Capability, and Services Provided:

- The Department responds to weather events (such as high winds, tornadoes, snowstorms, and ice storms) that can lead to severe infrastructure damage (such as down/damaged hydro lines or fibre optic networks).

Administrative and Operational Risks/Concerns/Observations:

- Accessibility around the City and its surrounding area may be a challenge during weather events.
- The Department may need to implement initiatives about safe practices for heating and other fire risks associated with severe weather events to increase public education/awareness of these topics.
- The City's residents may not have a 72-hour emergency kit.
- History has shown that heavy snows, ice storms, and high-wind events occur in the area with some regularity.
- Climate change is influencing weather events during all seasons.

13.2.5 Risk Overview: Fire in Residential Occupancy

Risk Level: Moderate

Risk Score: 90

Current Treatment, Capability, and Services Provided:

- The Department provides interior and exterior fire attack services, public education, inspections, and code enforcement.
- The Department is currently in the process of attaining certification from the Ontario Fire Marshal's Office to NFPA 1001 Level I and Level II and Hazardous Materials NFPA 472.

Administrative and Operational Risks/Concerns/Observations:

- Providing fire prevention programs, public education, and fire safety inspections requires the Department's time and resources.
- Although the Department has a comprehensive smoke/CO alarm program that meets requirements mandated by the Fire Protection and Prevention Act, it must ensure it maintains documentation regarding the outcomes of the program.
- There may be challenges ensuring that the Department is trained to meet the service level expected for these types of emergencies.
- There may be challenges ensuring that the Department can complete the required inspections needed to verify the City's multi-residential occupancies maintain code compliance and safety planning.
- The City has experienced several fires in mobile homes in recent years.
- A large portion of the City's buildings were built before the introduction of the Ontario Building Code.

13.2.6 Risk Overview: Road and Highway Emergency

Risk Level: Moderate

Risk Score: 90

Current Treatment, Capability, and Services Provided:

- The Department responds to various road incidents (such as motor vehicle collisions) and provides fire suppression, hazardous materials, and rescue services.
- The Department is currently in the process of attaining certification from the Ontario Fire Marshal's Office to NFPA 1001 Level I and Level II and Hazardous Materials NFPA 472.

Administrative and Operational Risks/Concerns/Observations:

- The Department needs to ensure it has a training plan/program in place for responding to incidents involving buses and large trucks.
- The City experiences a high volume of traffic on its City roads and the nearby provincial highways.
- Unknown materials may be transported through the City, including hazardous materials.
- The Department may need to respond outside the City to assist other fire departments with motor vehicle accidents.

13.2.7 Risk Overview: Fire in Commercial Occupancy

Risk Level: Moderate

Risk Score: 85

Current Treatment, Capability, and Services Provided:

- The Department provides structural firefighting services.
- The Department provides interior fire rescue services.
- Under Ontario's provincial legislature, the Department must conduct annual fire inspections for commercial occupancies.
- The Department is currently in the process of attaining certification from the Ontario Fire Marshal's Office to NFPA 1001 Level I and Level II and Hazardous Materials NFPA 472.

Administrative and Operational Risks/Concerns/Observations:

- A comprehensive fire safety inspection program is required.
- There are some commercial buildings in the City that may have the potential for an explosion or small hazardous materials spill occurring.
- The Department needs to complete pre-planning for this type of occupancy. The pre-planning is required to ensure the safety of firefighters is protected when they respond to incidents at these locations.
- Inspections for this type of occupancy require the Department's time and resources.

13.2.8 Risk Overview: Rail Emergency

Risk Level: Moderate

Risk Score: 84

Current Treatment, Capability, and Services Provided:

- The Department is trained to provide a hazardous materials response at the operational level. The Department can provide fire suppression if no hazardous materials are involved.
- The Department is currently in the process of attaining certification from the Ontario Fire Marshal's Office to NFPA 1001 Level I and Level II and Hazardous Materials NFPA 472.
- The Department may be able to provide rescue services (if the situation allows).

Administrative and Operational Risks/Concerns/Observations:

- A rail emergency may result in the closure of Highway 17 and cause traffic concerns in the area.
- Fires or derailments may cause long-lasting environmental issues.
- The City has vulnerable occupancies close to rail lines. Due to their location, those occupancies may require evacuation if a derailment occurs.
- A train derailment or stoppage may cause access issues for the Department. As a result, the Department will have challenges responding to some parts of the City, including its large business areas.

13.2.9 Risk Overview: Airport Transportation Incident

Risk Level: Moderate

Risk Score: 78

Current Treatment, Capability, and Services Provided:

- The Department provides structural firefighting services.
- The Department provides interior fire rescue services.

Administrative and Operational Risks/Concerns/Observations:

- This type of occupancy may have the potential for a fire/explosion or small hazardous materials spill.
- The Department needs to complete pre-planning for this type of occupancy. The pre-planning is required to ensure the safety of firefighters is protected when they respond to incidents at these locations.
- Inspections for this type of occupancy require the Department's time and resources.

13.1.10 Risk Overview: Hazardous Materials Incident

Risk Level: Moderate

Risk Score: 76

Current Treatment, Capability, and Services Provided:

- The Department is trained to the operational level for hazardous materials incidents.
- The Department's role is as follows: (1) activate the agencies/resources needed for an adequate response to these types of emergencies; (2) provide incident command until those agencies/resources arrive.
- The Department is currently in the process of attaining certification from the Ontario Fire Marshal's Office to NFPA 1001 Level I and Level II and Hazardous Materials NFPA 472.
- The Department currently works with the Dryden Mill and assists the mill's hazardous materials response team.

Administrative and Operational Risks/Concerns/Observations:

- Depending on where they are located, it may take considerable time before a responding agency can arrive on the scene of an emergency.
- Because of the risks involved with hazardous materials, the City's establishing and regulating bylaw needs to specify what is expected of the Department when it responds to these types of incidents.
- The Department needs to develop and implement a pre-planning program that includes a response protocol for potential rail incidents that may result in the release of hazardous materials.
- The Department needs to review the fire safety plans and material safety data sheets for the City's commercial and industrial occupancies to determine what level of emergency response is required at those locations.
- The Department must ensure it has adequate time and resources to conduct inspections and pre-plan for hazardous materials incidents. These tasks are required to ensure the Department can perform the actions needed to keep the City's residents safe.
- The Department must ensure its firefighters are trained and equipped to perform the services expected of them by the City's residents and the occupants of the commercial and industrial buildings.

13.1.11 Risk Overview: Human Health Emergency

Risk Level: Moderate

Risk Score: 72

Current Treatment, Capability, and Services Provided:

- The Department may be required to assist the City's paramedic services with providing access to patients.
- The Department may be required to provide transportation for patients in areas where only water access is available.
- The Department provides rescue services (such as for motor vehicle collisions).

Administrative and Operational Risks/Concerns/Observations:

- Human health emergencies may expose firefighters to viruses.
- There may be limited staff available to enact a response.
- Providing PPE and vaccines (if available) may be required.
- The Department must ensure it is trained to meet the service demands expected by the community.

13.1.12 Risk Overview: Critical Infrastructure Failure

Risk Level: Low

Risk Score: 48

Current Treatment, Capability, and Services Provided:

- The Department responds to some types of critical infrastructure failures, such as downed hydro lines.
- The Department provides a safety zone (and evacuation, if necessary) until the proper authorities arrive to isolate or repair the damaged critical infrastructure.
- The Department is currently in the process of attaining certification from the Ontario Fire Marshal's Office to NFPA 1001 Level I and Level II and Hazardous Materials NFPA 472.

Administrative and Operational Risks/Concerns/Observations:

- Depending on where they are located, it may take considerable time before a responding agency can arrive on the scene of an emergency.
- The Department will need to ensure its firefighters are trained to recognize the risks these types of incidents pose and the safety precautions they need to take when responding.
- Lengthy power outages can severely affect the City's vulnerable occupancies and public services.
- The Department should ensure it provides an adequate level of public education about the importance of having a 72-hour emergency kit.

13.1.13 Risk Overview: Flooding

Risk Level: Low

Risk Score: 48

Current Treatment, Capability, and Services Provided:

- The City may require the Department to assist with making areas and people safe during a flood.
- The City may require the Department to assist with response efforts until the proper authority arrives.
- The Ministry of Natural Resources and Forestry also shares some ownership and may manage a response.
- The Department may be required to provide rescue services.
- The Department is currently in the process of attaining certification from the Ontario Fire Marshal's Office to NFPA 1006: Water Rescue.

Administrative and Operational Risks/Concerns/Observations:

- The Department requires training related to flood responses. Additionally, the Department may need to clarify its relationship with external partners regarding responses to floods.
- The Department must ensure it is trained to meet the service demands the community expects it to provide.
- Residents who live in or have properties in flood zones require public education about flooding.
- Climate change can affect the frequency of flooding.
- In 2021, the water level at the Dryden Mill's dam was the biggest unknown flooding factor the Department had to manage. During that time, the Fire Chief was concerned about the integrity of the dam becoming compromised.

13.3 Risk Treatment Planning Process

13.4 Overview of the Risk Treatment Process

Risk treatment plans are developed after a community's public safety risks have been identified and analyzed. The RTP process follows an evidence-based approach that more clearly defines the problems posed by the risks. This approach considers the outcomes of proposed actions, assesses options, and provides recommendations to address the identified issues.

13.5 Risk Treatment Plans for the City of Dryden

The following subsections present the proposed RTPs for the City's identified public safety risks.

13.5.1 Risk Treatment Plan: Fire/Explosion in Industrial Occupancy

Risk Level: Extreme

Risk Score: 162

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   Life safety support is required because the City houses industrial occupancies that may be at risk of significant losses if a fire or explosion occurs.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met; however, there have been no inspections in these occupancies.

3. Does the community have the capability to deliver these services?

   The Department has appropriate suppression capabilities and can activate additional assistance through mutual aid if required.

4. Is there a better way to make the community safer?

   The Department should conduct inspections, deliver public education, provide code enforcement, and pre-planning these types of occupancies. The Department should also ensure that a fire prevention policy is created and implemented.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   There may be emerging risks not currently identified because the Department is not completing routine inspections of the City's industrial occupancies.

Recommended Risk Treatment Options and Strategies/Actions

- Mitigate
  - The Department must conduct inspections at these occupancies to identify their risks and ensure the occupancies remain compliant with the FPPA.

Resources Needed

- Staff time

Timeline

- Ongoing

13.5.2 Risk Treatment Plan: Wildland Fire

Risk Level: Very High

Risk Score: 132

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   The City has a history of wildland fires, and the Department's records show it has made responses to open-air fires throughout the community.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met. The City also has an agreement with Fire Management Area Haliburton for wildland fire coverage.

3. Does the community have the capability to deliver these services?

   The City has the resources to deliver these services to the community and provides excellent information about wildland fires to applicants and landowners. The City also has a burning bylaw in place, and it requires permits for open-air burning.

4. Is there a better way to make the community safer?

   The Department can use social media and the City's website to provide public education about emergencies and the importance of having a 72-hour emergency kit.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   None currently.

Recommended Risk Treatment Options and Strategies/Actions

- Mitigate
  - Continue to provide public education about the City's open-air bylaw to help reduce the number of calls for emergency responses.
  - Use the Fire Smart prevention program provided by the Ministry of Natural resources.
  - Ensure that the Department's staff continues receiving grass and wildland firefighting training from a recognized training provider.

Resources Needed

- Staff time and resources

Timeline

- Ongoing

13.5.3 Risk Treatment Plan: Fire in Vulnerable Occupancy

Risk Level: High

Risk Score: 104

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   There are seven vulnerable occupancies within City limits.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met.

3. Does the community have the capability to deliver these services?

   The Department has been conducting annual inspections in these occupancies as per the provincial registry.

4. Is there a better way to make the community safer?

   The Department can continue conducting inspections, witnessing fire drills, and documenting violations and inspections. The Department can also monitor any trends that it notices.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   None currently.

Recommended Risk Treatment Options and Strategies/Actions

- Mitigate
  - Continue monitoring, conducting annual inspections, witnessing fire drills, and ensuring these occupancies remain compliant with the FPPA.
  - Develop a response standard for the Department.

Resources Needed

- Staff time

Timeline

- Ongoing

13.5.4 Risk Treatment Plan: Weather Event

Risk Level: High

Risk Score: 102

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   The City has had extreme weather events in the past. There have also been significant winter storms and warnings in the area.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met.

3. Does the community have the capability to deliver these services?

   To date, the Department has been able to provide the required services; however, neighbouring departments may be called upon to assist through the City's mutual aid agreement. The City may also require assistance from the provincial government.

4. Is there a better way to make the community safer?

   The Department can provide public education about what to do during an emergency and promote the importance of having a 72-hour emergency kit. While the Department has been providing some public education sessions, these initiatives should be delivered on a more routine basis.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   None currently.

Recommended Risk Treatment Options and Strategies/Actions

- Mitigate
  - Develop a response standard for the Department.
  - Continue providing public education about emergency preparedness and promoting the importance of having a 72-hour emergency kit.
  - The Department can assist with delivering public education on emergency management to City residents.
  - Ensure the Department understands how mutual aid and the OFM can assist with large-scale events.

Resources Needed

- Staff time

Timeline

- Ongoing

13.5.5 Risk Treatment Plan: Fire in Residential Occupancy

Risk Level: Moderate

Risk Score: 90

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   The City currently has 2,735 residential units. Over the last five years, the Department responded to 41 residential fires. The damage from those fires resulted in a $3,759,000 dollar loss.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met. The Department has also begun implementing a smoke/carbon monoxide program.

3. Does the community have the capability to deliver these services?

   The Department can deliver these services, and under its mutual aid agreement, it can access additional resources for emergency responses (if required). However, significant staff resources are required to ensure that fire prevention and public education programs are being delivered. Properties requiring annual inspections demand a great deal of staff time. Therefore, the City should review its inspection and fire prevention programs/capabilities and consider further action.

4. Is there a better way to make the community safer?

   As recommended by the OFM, the three lines of defence should be used as the basis for all life safety programs. The Department should provide enhanced public education programs and code enforcement for buildings in multi-residential occupancies that are based on the OFM model.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   There may be emerging risks not currently identified/being treated because of the lack of inspections over the past five years.

Recommended Risk Treatment Options and Strategies/Actions

- Mitigate
  - Develop a response standard for the Department.
  - Review the current fire prevention policy and building stock where inspections are required. Once these factors are identified, ensure an inspection schedule is in place, and the Department has the resources to implement the schedule.

- Continue to promote the smoke/CO alarm program throughout the community.
- Ensure adequate time and resources are provided and focused on public education and inspection programs.

Resources Needed

- Staff time
- Smoke alarms
- CO alarms
- Education materials

Timeline

- Ongoing

13.5.6 Risk Treatment Plan: Road and Highway Emergency

Risk Level: Moderate

Risk Score: 90

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   The Department responds to several incidents in the City every year involving motor vehicle collisions and fires. These incidents involve both passenger and commercial vehicles.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met.

3. Does the community have the capability to deliver these services?

   The Department can deliver these services but may need to request assistance for large-scale incidents or specialized incidents through the established mutual aid agreement.

4. Is there a better way to make the community safer?

   Although the Department can ensure an adequate response, hiring an engineer to review the City's road networks for high-collision areas may provide information that can prevent/reduce accidents from occurring in those areas.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   None currently.

Recommended Risk Treatment Options and Strategies/Actions

- Transfer
  - Transfer the risk to the municipal, county, and provincial agencies with jurisdiction over the City's road networks.

Resources Needed

- N/A

Timeline

- Ongoing

13.5.7 Risk Treatment Plan: Fire in Commercial Occupancy

Risk Level: Moderate

Risk Score: 85

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   The City has commercial occupancies that may be at risk of significant losses due to fires and therefore require life safety support.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met; however, there have been no inspections in these occupancies. The Department should be conducting inspections and public education in these occupancies as per governing legislation.

3. Does the community have the capability to deliver these services?

   The Department has suppression capabilities and can activate additional assistance through mutual aid if required.

4. Is there a better way to make the community safer?

   The Department should ensure that a fire prevention policy is created and implemented. The Department should also focus on delivering code enforcement and conducting pre-planning for these types of occupancies.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   There may be emerging risks not currently identified because the Department is not conducting routine inspections in the City's commercial occupancies.

Recommended Risk Treatment Options and Strategies/Actions

- Mitigate
  - Conduct inspections at these occupancies to determine their hazards and risks.
  - Ensure these occupancies remain compliant with the FPPA.

Resources Needed

- Staff time

Timeline

- Ongoing

13.5.8 Risk Treatment Plan: Rail Emergency

Risk Level: Moderate

Risk Score: 84

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   Although the City has not experienced any derailments, it has had fires along the tracks as well as one locomotive fire in the past.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met.

3. Does the community have the capability to deliver these services?

   If a train derailment occurs, the Department and the City will rely on CP Rail to respond and assist with leading the clean-up efforts. For a significant event, the neighbouring fire department may assist under the City's mutual aid agreement.

4. Is there a better way to make the community safer?

   CP Rail can educate the Department's staff about train derailments, how to identify products in rail cars, and how to develop rail emergency pre-plans. In addition, there is a roster/database the Department can access that provides information about the different cargo transported through the City.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   The Department does not provide a hazardous material response at a technical level. Additionally, critical infrastructure (such as a food supply store or wastewater facility) may be present in the evacuation area of a derailment.

Recommended Risk Treatment Options and Strategies/Actions

- Accept
  - Continue to monitor (the federal government is the controlling authority for this type of risk).
- Share
  - Ensure maintenance work is completed on the rail lines.
  - Ensure CP staff are trained to assist with rail emergencies.
  - Provide rail emergency training to the Department.

- Mitigate
    - The Department can develop evacuation, response, and shelter-in-place plans now, as time may be limited when this type of incident occurs, and such plans are required.

Resources Needed

- Staff time

Timeline

- Ongoing

13.5.9 Risk Treatment Plan: Airport Transportation Incident

Risk Level: Moderate

Risk Score: 78

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   The City's airport has experienced serious incidents involving fatalities. Minor incidents occur yearly.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met.

3. Does the community have the capability to deliver these services?

   The Department has suppression capabilities and can activate additional assistance through mutual aid if required.

4. Is there a better way to make the community safer?

   The Department can continue to train its staff on responses to this type of incident.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   None currently.

Recommended Risk Treatment Options and Strategies/Actions

- Accept
  - Continue to monitor (the federal government is the controlling authority for this type of risk).
- Share
  - Ensure maintenance work is completed at the airport.
  - Ensure airport staff are trained to assist with emergencies.
  - Provide the Department's staff with airport emergency training.

Resources Needed

- Staff time

Timeline

- Ongoing

13.2.10 Risk Treatment Plan: Hazardous Materials Incident

Risk Level: Moderate

Risk Score: 76

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   The Department currently responds to hazardous materials incidents and will potentially need to continue responding to these types of incidents in the future, given the City's transportation corridors.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met.

3. Does the community have the capability to deliver these services?

   The Department is trained to the operational level for hazardous materials incidents. Further assistance for these types of incidents may be needed and can be provided through the established mutual aid agreement as well as from the province and responding agencies. The Department is also currently in the process of attaining certification from the Ontario Fire Marshal's Office to NFPA 1001 Level I and Level II and Hazardous Materials NFPA 472.

   The City should note that the Department will need its own equipment to provide this type of response to the required level, as it currently borrows the necessary equipment from the Dryden Mill.

4. Is there a better way to make the community safer?

   The Department can conduct inspections and pre-planning for sites at risk of having a hazardous materials incident occur.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   None currently.

Recommended Risk Treatment Options and Strategies/Actions

- Mitigate
  - Conduct inspections to identify risks.
  - Conduct pre-planning for the buildings at risk for hazardous materials incidents.
  - Be aware of the hazardous materials transported through the community and

continue monitoring.

- Develop a response standard for the Department.

Resources Needed

- Staff time
- Council approval for the Department to purchase its own equipment for hazardous materials responses

Timeline

- Ongoing

13.2.11 Risk Treatment Plan: Human Health Emergency

Risk Level: Moderate

Risk Score: 72

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   The Department currently assists with responses to health emergencies.

2. Does the current treatment meet community needs/expectations?

   The Department has a tiered response agreement with Northwest Paramedic Services and follows the recommendations of the local public health unit.

3. Does the community have the capability to deliver these services?

   Although there is no evidence that suggests expectations are not being met, there is a possibility that services could be altered due to staff shortages or if public needs change.

4. Is there a better way to make the community safer?

   The Department follows the recommendations of the local health unit and the Province of Ontario, as they are the leads for this type of emergency.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   None currently.

Recommended Risk Treatment Options and Strategies/Actions

- Accept
  - Continue monitoring

Resources Needed

- N/A

Timeline

- Ongoing

13.2.12 Risk Treatment Plan: Critical Infrastructure Failure

Risk Level: Low

Risk Score: 48

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   The City has experienced events that led to damage or the failure of its hydro, communication systems, and water mains. Power outages have also occurred.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met.

3. Does the community have the capability to deliver these services?

   The City has some available resources to deliver these services to the community. Other agencies will be contacted to respond to these emergencies as required.

4. Is there a better way to make the community safer?

   The Department can use social media and the City's website to provide public education about emergencies and the importance of having a 72-hour emergency kit.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   None currently.

Recommended Risk Treatment Options and Strategies/Actions

- Mitigate
  - Continue monitoring.
  - Develop a response standard for the Department.
  - Continue to provide public education about emergencies and promote the importance of having a 72-hour emergency kit.

Resources Needed

- Staff time

Timeline

- Ongoing

13.2.13 Risk Treatment Plan: Flooding

Risk Level: Low

Risk Score: 48

Determining Appropriate Fire Protection Services

1. What evidence is there to support the need for these services?

   In the spring of 2021, the water level at the dam near the Dryden Mill threatened to overrun the dam.

2. Does the current treatment meet community needs/expectations?

   There is no evidence that suggests expectations are not currently being met.

3. Does the community have the capability to deliver these services?

   The City's current capabilities appear to meet its needs.

4. Is there a better way to make the community safer?

   The Department can use social media and the City's website to provide public education about emergencies and the importance of having a 72-hour emergency kit.

5. Are there any emerging risks in the community that are not currently treated or cannot be treated by the fire department?

   None currently.

Recommended Risk Treatment Options and Strategies/Actions

- Accept
  - Continue monitoring.
  - Continue to provide public education about emergencies and promote the importance of having a 72-hour emergency kit.

Resources Needed

- Staff time

Timeline

- Ongoing

13.6 Public Safety Response Entities for City of Dryden

Table 32 helps complete this CRA's public safety response profile, which is related to Ontario Regulation 378/18 ("the types of incidents responded to by other entities in the community and those entities' response capabilities"). Activating the appropriate resources and maintaining scene security until that "other entity" arrives are often the only expectations of community response.

Table 32: The City's public safety response entities.

Type of Incident/Response	Public Safety Response Entity	Response Capabilities
Fire/Explosion	OFM Fire Investigation Services	The OFM investigates and provides consultation services on the cause, origin, and circumstances of fires and explosions as per Fire Marshal Directive 2015-002: Reporting of Fires and Explosions Requiring Investigation.
Fire/Explosion	Technical Standards and Safety Authority (TSSA)	The TSSA investigates non-compliance with codes and regulations related to technology and equipment before and following a related incident.
Fire/Explosion	Ontario Provincial Police	The OPP can assist with traffic control, investigations, and scene control and provide a criminal investigation if needed.
Fire/Explosion	Northwest Emergency Medical Services	Northwest Emergency Medical Services provides transportation to medical facilities and assesses the health of firefighters and facility occupants.
Fire/Explosion	Kenora District Services Board	The Kenora District Services Board provides emergency shelter for fire victims.
Wildland Fire	Fire Management Area Dryden (MNR) for Wildland Fire Coverage	Fire Management Area Dryden assists with fire suppression activities.
Rail Line Fire, Explosion, and Derailment	Canadian Pacific Rail	CP Rail provides information and assistance regarding the nature of the incident and takes action to

Type of Incident/Response	Public Safety Response Entity	Response Capabilities
		correct the incident.
Medical Emergencies	Northwest Emergency Medical Services	Northwest Emergency Medical Services provides patient assessments and transportation to medical facilities.
Medical Emergencies	Ministry of Health and Long-Term Care (EMAT)	The EMAT is a flexible, modular team that provides specific medical services and supports, including up to 56 beds (20 critical care and 36 intermediate care). The EMAT can be deployed to road-accessible Ontario communities within 24 hours of approval.
Medical Emergencies	Local Ministry of Health and Long-Term Care Emergency Health Services	The Local Ministry of Health and Long-Term Care Emergency Health Services is a series of interrelated land and air emergency medical services designed to provide timely responses and pre-hospital care.
Medical Emergencies	Red Cross	The Red Cross is available when health resources are significantly stressed by an emergency or major incident.
Road and Highway Emergency	Ministry of Transportation (MTO)	The MTO manages the provincial road network and can assist with traffic control and repairs.
Road and Highway Emergency	City of Dryden Public Works	The City of Dryden Public Works manages the City's road network and can assist with traffic control and repairs. The City's Public Works also conducts damage assessments of the transportation system and facilities, helps keep roadways open for responses, and coordinates contractor equipment, personnel,

Type of Incident/Response	Public Safety Response Entity	Response Capabilities
		and engineering expertise as needed.
Critical Infrastructure Failure	Hydro One	The Hydro One Customer Communications Centre receives reports of power outages, which generates an outage report. The Ontario Grid Control Centre, which operates the power system, receives the outage report, and then notifies the appropriate local crew to assess the situation.
Critical Infrastructure Failure	City of Dryden Public Works	The City of Dryden Public Works handles water distribution system repairs and services disruptions, including hydrants. This agency can also boost pressure in the system if needed. The City's Public Works also operates the wastewater treatment plant and pumping stations as well as manages sewer line repairs and system maintenance.
Critical Infrastructure Failure	Tbaytel Communications	Tbaytel Communications handles the operation and repairs of the City's telecommunications network.
Critical Infrastructure Failure	Enbridge	Enbridge operates and maintains the natural gas lines running in the City. Enbridge can also isolate gas line breaks, make repairs, and turn off service to a building or area.
Hazardous Materials Incident	Ministry of the Environment, Conservation and Parks (MECP)	The MECP responds and assesses the environmental and health impacts of an occurrence. The MECP ensures legislated responsibilities are met – including tracking and following up on clean-up efforts – provides advice and information about the incident,

Type of Incident/Response	Public Safety Response Entity	Response Capabilities
		coordinates agency response (if needed), and initiates government response when required. The MECP also ensures cost recovery takes place for a response.
Hazardous Materials Incident	Ontario Fire Marshal Office	The OFM is an external resource to the community that provides IMS liaisons and logistical and operational support through the specialized functions of emergency management field officers, fire investigators, and hazardous materials specialists. The Provincial Emergency Operations Centre (PEOC) may also assist. The PEOC provides 24/7 service that includes monitoring evolving situations, coordinating a provincial response to major emergencies, activating provincial hazardous materials response teams, ensuring response coordination in support of the lead ministry, and requesting federal or large-scale assistance as needed. Access to provincial hazardous materials teams can also be arranged.
Hazardous Materials Incident	Ontario Provincial Police	Local police services manage road closures, the redirection of traffic, and related criminal and provincial investigations. This service integrates into the IMS structure and can provide logistical incident support and media relations.
Hazardous Materials Incident on railway	Canadian Pacific Rail	CP Rail provides information and assistance regarding the nature of rail incidents and takes action to correct the incidents.

Type of Incident/Response	Public Safety Response Entity	Response Capabilities
Airport Incidents	Transport Canada	Transport Canada investigates and provides consultation services on the cause, origin, and circumstances of fires. Transport Canada also can issue a no-fly zone or close an airport for take-offs and landings.

13.7 Summary of the Public Safety Risks in City of Dryden

Table 33 summarizes the City's top-five risks and their recommended RTPs. (See Appendix D for the scoring methodology used to produce the information in this table).

Table 33: The City's top-five risks and corresponding risk treatment plans.

Risk	Appropriate Level of Service Being Delivered?	Risk Treatment Plan
Fire in Industrial Occupancy	Yes	Conduct inspections at these occupancies to determine their risks and hazards and ensure they remain compliant with the Fire Protection and Prevention Act.
Wildland Fire	Yes	Continue to provide public education about the City's open-air bylaw to help reduce the number of calls for emergency responses. Use the Fire Smart Prevention Program provided by the Ministry of Natural resources. Ensure that Department's staff continues receiving grass and wildland firefighting training from a recognized training provider.
Fire in Vulnerable Occupancy	Yes	Continue monitoring, conducting annual inspections, witnessing fire drills, and ensuring these occupancies remain compliant with the Fire Protection and Prevention Act.
Weather Event	Yes	Continue to provide public education on what to do in the event of an emergency and promote the importance of having a 72-hour emergency kit. The Department can assist with delivering public education on emergency management to City residents. Ensure the Department understands how mutual aid and the OFM can assist with large-scale events.
Fire in Residential Occupancy	Yes	Review the current fire prevention policy and the building stock where inspections are required. Ensure an inspection schedule is in place and the Department has the resources to implement the schedule.

Risk	Appropriate Level of Service Being Delivered?	Risk Treatment Plan
		Continue to promote the smoke/CO alarm program throughout the community. Ensure adequate time and resources are provided to the Department so it can focus on public education and inspection programs.

Appendix A: Resources

The Loomex Group used the following resources to help develop this community risk assessment:

City of Dryden Bylaws.

City of Dryden Official Plan, 2012.

City of Dryden Community Improvement Plan, 2019.

Fire Protection and Prevention Act, 1997.

Google Maps.

McSweeney & Associates, 2009.

Ontario Building Code.

Ontario Fire Code.

Ontario Regulation 213/07: Fire Code.

Ontario Regulation 378/18: Community Risk Assessments.

Statistics Canada Business Register.

Statistics Canada. February 8, 2017. Census Profile, 2016 Census. Statistics Canada Catalogue no. 98-316-X2016001. Ottawa. Version updated June 18, 2019. Ottawa.

Appendix B: Fire Marshal Directive 2022 – 001

Fire Marshal Directive 2022 – 001

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

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

Background

It has been well established that buildings constructed with truss and lightweight construction systems[i] (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 in buildings to inform delivery of fire suppression services 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 the Community Risk Assessment required under Ontario Regulation 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 required[iii] 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 fire department), are directed to:

- Ensure that information on the presence of truss and lightweight construction systems (lightweight construction) in a community's building stock, that is known and documented in the Community Risk Assessment, is used to inform fire suppression pre-planning activities conducted within the community:
    - by the local fire department; and
    - by other municipalities providing fire suppression services through fire protection agreements.

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

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

Rationale

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

Jon Pegg

Ontario Fire Marshal

February 25, 2022

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[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 C: Glossary of Terms

There are varying definitions for the terms used in risk assessment and risk management, depending on the context to which a term is applied. For this CRA, The Loomex Group used the following definitions, as they generally align with both the Emergency Management Ontario's Glossary of Terms and the Fire Protection and Prevention Act, 1997.

Assessment: The evaluation and interpretation of available information to provide a basis for decision-making.

Catastrophe: An emergency of particularly severe proportions.

Community: A generic term that includes both municipalities and First Nations.

Consequence: The outcome of an event or situation expressed qualitatively or quantitatively, being a loss, injury, or disadvantage.

Critical infrastructure: The application of risk management and business continuity management processes and techniques for the purpose of reducing the vulnerabilities of critical infrastructure in both the physical and cyber realms by decreasing the frequency, duration and scope of disruptions and facilitating response and recovery.

Economic: Disruptions to businesses and financial activities, monetary losses due to impacts from the event and other negative consequences for the community or regional economy. The negative economic consequences of a hazard, including on businesses, industries, or regional economies.

Environmental: Harm to human and non-human (i.e., wildlife, fish, and vegetation) species of life and general decline in quality of life within the community or ecosystem due to air/water/soil contamination. The negative consequences of a hazard on the environment, including the soil, water, air and/or plants and animals.

Evacuation: Potential for formal evacuation, shelter-in-place orders, or people stranded.

Fire department (fire services): A group of firefighters authorized by a municipality, group of municipalities or by an agreement to provide fire protection services.

Hazard: A phenomenon, substance, human activity, or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage. These may include natural, technological, or human-caused incidents or some combination of these.

Hazardous material: A substance (gas, liquid or solid) capable of causing harm to people, property, environment, economy and/or services, e.g., a toxic, flammable, or

explosive substance.

Life safety: Injuries or loss of life due to community and/or responder exposure to life-threatening situations.

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.

Ontario Building Code: A set of ordinances or regulations and associated standards intended to control aspects of design, construction, materials, alteration, and occupancy of structures that are necessary to ensure human safety and welfare, including resistance to collapse and damage.

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

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

Psychosocial: Unusual or uncharacteristic behaviours such as mental health issues (such as hoarding).

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.

Reputational: The perception of one or more organizations or jurisdictions in the minds of its stakeholders, the public, and others who are vital to its success.

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

Risk assessment: A methodology to determine the nature and extent of risk by analyzing potential hazards and the evaluation of vulnerabilities and consequences.

Appendix D: Risk Scoring Methodology

This appendix summarizes the scores for the public safety risks that were identified in the City. The scores are followed by an explanation of the likelihood and consequence categories and levels. This scoring methodology mirrors Emergency Management Ontario's Hazard Identification and Risk Assessment methodology but views the consequences and hazard types differently than Emergency Management Ontario; this is to ensure that the risk assessment reflects the delivery of fire protection services rather than an emergency management program, which has a slightly different focus.

Likelihood Overview

The likelihood table below is copied from Emergency Management Ontario's HIRA methodology. This methodology was used as part of the CRA to help determine the likelihood of each identified hazard becoming an actualized event.

Likelihood	Category	Chance of Occurrence	Description
1	Rare	Occurs every 100 years or more.	Less than a 1% chance of occurrence in any year.
2	Very Unlikely	Occurs every 50 – 99 years.	Between a 1 – 2% chance of occurrence in any year.
3	Unlikely	Occurs every 20 – 49 years.	Between a 2 – 5 % chance of occurrence in any year.
4	Probable	Occurs every 5 – 19 years.	Between a 5 – 20% chance of occurrence in any year.
5	Likely	Occurs <5 years.	Over 20% chance of occurrence in any year.
6	Certain	The hazard will occur annually.	100% chance of occurrence in any year.

Consequence Overview

Consequences were scored across the eight categories that are described below. The consequences are based on Emergency Management Ontario's HIRA; however, the consequence categories were reduced from ten to eight for the CRA, and a heavier overall weighting was given to the "life safety" category – this is to balance the consequences from a front-line emergency response perspective (compared to an emergency management program perspective).

Scores are calculated as follows:

- High x 3
- Moderate x 2
- Low x 1

The maximum score for any category is 3, except for the life safety category. The life safety category has a 3x weight attached to it, and the maximum score for this category is 9.

Consequence Type	None (0)	Low (1)	Moderate (2)	High (3)
1. Life Safety	Not likely to result in injuries or fatalities. No life safety issues.	Medical treatment required, but no fatalities. Minor treatment or limited hospitalization.	Extensive injuries, significant hospitalization, and/or a fatality.	Large number of severe injuries requiring hospitalization and/or multiple fatalities.
2. Evacuation	Not likely to result in an evacuation, shelter-in-place orders, 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.
1. Psychosocial	Not likely to result in significant impacts to individuals' mental and emotional well-being.	Moderate and/or generally short-term impacts to one or more individuals' mental and emotional well-being.	Significant impacts to one or several individuals' mental and emotional well-being, including long-term impacts.	Widespread community impacts to mental and emotional well-being, including long-term impacts.
4. Property Damage	Not likely to result in property damage.	Could cause minor to moderate damage.	Localized severe damage.	Widespread severe damage or severe damage to multiple properties.

Consequence Type	None (0)	Low (1)	Moderate (2)	High (3)
5. Critical Infrastructure	Not likely to disrupt assets or services.	Could cause minor disruption of assets or services.	Could cause major but localized or short-term disruptions to critical infrastructure services.	Could cause widespread, severe, ongoing disruption of assets or services.
6. Environmental	Not likely to result in environmental damage.	Could cause localized and reversible damage. Quick clean up possible.	Could cause major but reversible damage. Clean up difficult.	Could cause severe, irreversible damage. Clean up not possible.
7. Economic	Not likely to disrupt business/financial activities.	Minor disruption of business/financial activities or the economy of the local area.	Could result in some losses for one or more businesses or other negative consequences for the regional or community economy.	Could result in losses for an industry or severe economic impact in the community or region.
8. 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 some significant or long-term legal, political, or reputational impacts.	Likely to result in significant and/or lasting legal, political, or reputational impacts.