

COMMUNITY RISK ASSESSMENT



May 10, 2024



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INTRODUCTION

The Fire Protection and Prevention Act, 1997 and subsequent Regulation 378/18 requires each Ontario municipality complete and review a Community Risk Assessment (CRA).

O. Reg 378/18 states that,

Every municipality, and every fire department in a territory without municipal organization, must,

- a. complete and review a community risk assessment as provided by this Regulation; and
- b. use its community risk assessment to inform decisions about the provision of fire protection services.

The Office of the Fire Marshal is responsible for monitoring and reviewing all municipal community risk assessment to ensure municipal compliance with *O. Reg 378/18*. The risk assessment must be submitted to the Office of the OFMEM for approval no later than July 1, 2024. Ontario Regulation 378/18 views this assessment as a living document which should be updated as the needs and circumstances of the Town of Kingsville change. It must be reviewed annually by the municipality and a full risk assessment shall be completed every five years.

The community risk assessment has been completed following the format identified in *OFM-TG-02-2019* capturing the mandatory profiles listed. This process identifies, analyzes, and evaluates risks to public safety.

The purpose of a completed and approved assessment is to permit the municipality, through municipal legislation passed by Council, to make informed decisions as to the type and level of fire protection services (core services) they will provide, through the efforts of the Kingsville Fire Rescue Services (KFRS) based on the identified risks.

The completion of the risk assessment is not only to meet the regulatory requirements but will also be a resource to assist in the development of a Fire Master Plan.

CONDUCTING A COMMUNITY RISK ASSESSMENT

Identifying Risks – Mandatory Profiles

Risk is defined as a measure of the probability and consequence of an adverse effect to health, property, organization, environment, or community as the result of an event, activity, or operation. The first step in conducting a community risk assessment is to identify the various fire and life safety risks in the community. This is done by gathering data about the make-up of the community.

The Regulation identifies nine mandatory profiles to be assessed by the municipality during the completion of the assessment, including:

- 1) Geographic

- 2) Building Stock
- 3) Critical Infrastructure
- 4) Demographics
- 5) Hazards
- 6) Public Safety Response
- 7) Community Services
- 8) Economic
- 9) Past Fire Loss and Event History

The data worksheets for each profile are included in this document, and these worksheets will assist in identifying the fire and life safety risks that could affect the community.

PRIORITIZING RISKS

Once risks have been identified they should be prioritized. This section discusses how risks can be prioritized based on the probability of the risk happening and the consequence if the risk occurs. **Table 1: Probability Levels** and **Table 2: Consequence Levels** is used to help determine the probability and consequence of each risk identified on the worksheets.

Probability

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

Table 1: Probability Levels

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

Consequence

The consequence of a fire or emergency is the potential losses or negative outcomes associated with the event. The application of professional judgment and reviews of past occurrences are important methods used for determining consequence levels.

Estimating the consequence level of an incident or event should involve an evaluation of four components:

- a. **Life Safety:** Injuries or loss of life due to occupant and firefighter exposure to life threatening fire or other situations.
- b. **Property Loss:** Monetary losses relating to private and public buildings, property content, irreplaceable assets, significant historic/symbolic landmarks and critical infrastructure.
- c. **Economic Impact:** Monetary losses associated with property income, business closures, a downturn in tourism and/or tax assessment value, and employment layoffs.
- d. **Environmental Impact:** Harm to human and non-human (i.e., wildlife, fish and vegetation) species of life and a general decline in quality of life within the community due to air/water/soil contamination as a result of the incident and response activities.

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

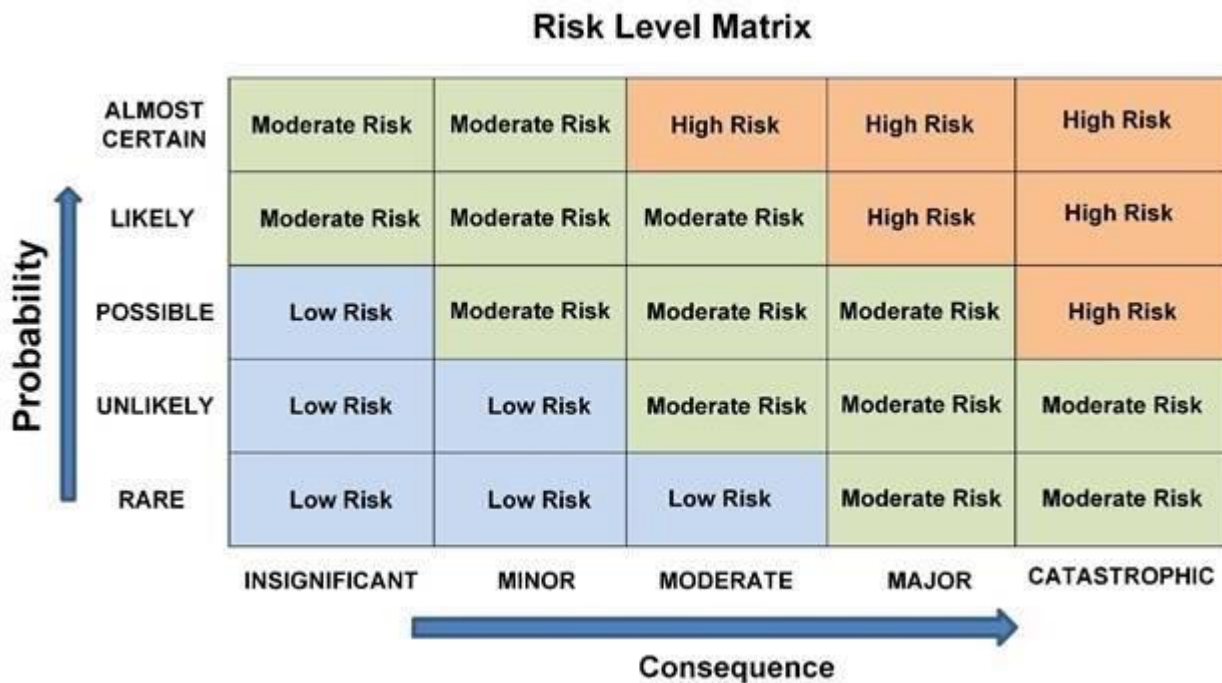
Table 2: Consequence Levels

Description	Specifics
Insignificant	<ul style="list-style-type: none">• no life safety issue• limited valued or no property loss• no impact to local economy, and/or• no effect on general living conditions
Minor	<ul style="list-style-type: none">• potential risk to life safety of occupants• minor property loss• minimal disruption to business activity, and/or• minimal impact on general living conditions
Moderate	<ul style="list-style-type: none">• threat to life safety of occupants• moderate property loss• poses threat to small local businesses, and/or• could pose a threat to the quality of the environment

Major	<ul style="list-style-type: none"> • potential for a large loss of life • would result in significant property damage • significant threat to large businesses, local economy and tourism, and/or • impact to the environment would result in a short term, partial evacuation of local residents and businesses
Catastrophic	<ul style="list-style-type: none"> • significant loss of life • multiple property damage to a significant portion of the municipality • long-term disruption of businesses, local employment, and tourism, and/or • environmental damage that would result in long-term evacuation of local residents and businesses

Assigning a Risk Level

Assigning a risk level using the Risk Level Matrix, helps to determine how to address or treat each of them. The Risk Level Matrix can assist fire departments to determine risk levels based on the probability and consequence levels of each identified risk. Risks can be assigned as low risk, moderate risk or high risk. The matrix below can be used to determine the assigned risk level.



Risk Treatment Options

The different levels of treatment of the risks are categorized as the following:

- **Avoid the Risk** – *implementation of programs to prevent fires or emergencies from occurring.*
- **Mitigate the Risk** - *programs and initiatives implemented to reduce the probability and/or consequences of a fire or emergency.*
- **Accept the Risk** – *after identifying and prioritizing a risk, it is determined that there are no specific programs or initiatives to be implemented to address this risk.*
- **Transfer the Risk** – *the fire department has chosen to transfer the impact and/or management of the risk to another organization or body or outside agency.*

Once risk levels have been assigned, it can be determined how best to treat each of them and the resources required to do so.

SETTING THE TYPE AND LEVEL OF FIRE PROTECTION SERVICES

When setting the type and level of fire protection services, the Fire Protection and Prevention Act and the OFM Fire Safety Effectiveness Model, known as the “Three Lines of Defence,” should be considered in terms of the impact each will have on the probability or consequence of identified risks. The three lines of defence are:

1. Public education and prevention
2. Fire safety standards and enforcement
3. Emergency response

Once fire departments have determined the preferred treatment option for each risk, they can plan and implement activities that address those risks. Things to consider include the fire department’s current resources, staffing levels, training, equipment and authority versus those that may be required to implement the preferred treatment options.

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

The process of making informed decisions about the provision of fire protection services should include careful consideration of the following:

- Implementation of public fire safety education, Fire Code inspections and enforcement, and emergency response activities that are appropriate to address the causes, behaviours or issues associated with identified risks.
- Capabilities and capacity of the fire department (e.g., financial and staffing resources, training, equipment, authority, etc.) that may be required to implement preferred treatment options.

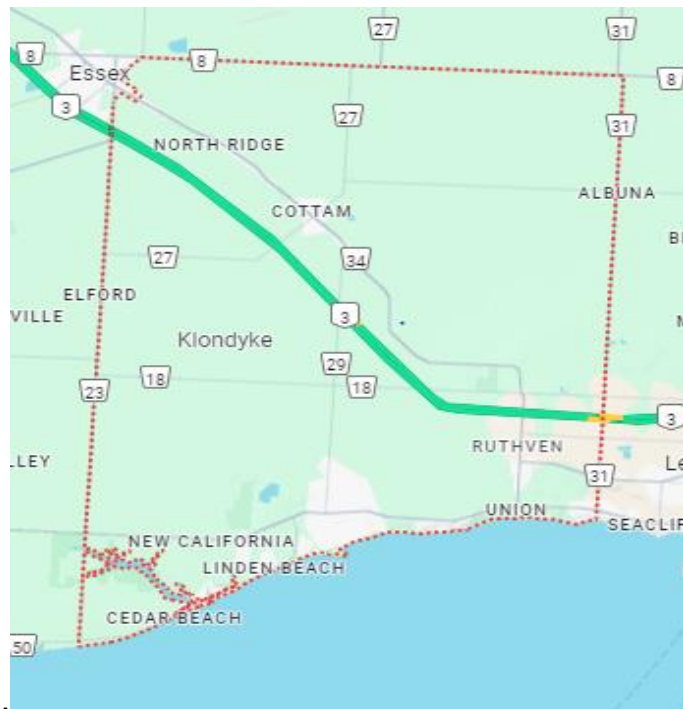
- Strategic partners with common interests, available resources, or skill sets that could assist in addressing risks using the applicable risk assessment profiles.
- Establishing and Regulating By-laws, operational policies and standard operating guidelines that reflect the fire protection services to be provided to address the identified risks.
- Establishment of goals and objectives, strategies, timelines, and evaluation for the proposed fire protection services to be provided.
- Communication with municipal council and the public to outline the types and levels of fire protection services that will be provided.

COMMUNITY CHARACTERISTICS PROFILES

1. Geographic Profile

A geographic profile describes the physical features of the community, including the nature and placement of highways, waterways, railways, canyons, bridges, landforms, and wildland-urban interfaces. Physical characteristics may also have risk concerns that could have a potential impact on fire service access or response time.

Town of Kingsville is located within Essex County siting along the north shore of Lake Erie and is located as the most southern Town in Canada. With 247 square kilometers and a population of 22,120, Kingsville neighbours the Municipality of Leamington and has one of the largest concentrations of vegetable greenhouses in North America.



There are many tourism and recreational opportunities in Kingsville. Jack Miner Bird Sanctuary is a popular spot for bird-watching, and our Chrysler Canada Greenway interconnects with the National Waterfront Trail. Our marine facilities include the Cedar Island Marina and Yacht Club and we host an international working harbour at the Port of Kingsville.

Geographic Profile Risk

Geographic Feature	Potential Impact on the Delivery of Fire Protection Services
<p>Creeks, Rivers and Streams Lake Erie</p>	<ul style="list-style-type: none"> • Impacts training and equipment for response service delivery. • Impacts response/travel timelines to emergency calls. • Recreational/tourist activities impact the delivery of public fire safety messaging. • The river and streams may flood in the spring impacting property, infrastructure, and response times. • KFRS has limited training and equipment to aid in performing ice and water rescues. • KFRS does not have the capabilities of fighting marine vessel fires, offshore. • Impacts training, equipment for response service delivery. Requirement of specialised training and equipment • Response capabilities are hampered due to lack of access points • Both permanent and influx of warm seasonal residents reside on lake
<p>Wetlands/Watersheds</p>	<p>During summer months, increased risk of drownings. In the winter, snowmobiles/ice fisherman may fall through the ice as they are not familiar with the thickness of the ice or water currents under the ice.</p> <ul style="list-style-type: none"> • Response capabilities may be hampered due to lack of access points. • Response capabilities are hampered where the parties involved are not familiar with their exact location.

<p>Provincial Highways/County Roads/Municipal Roads</p>	<ul style="list-style-type: none"> • There are numerous thoroughfares and streets within the Town. • Highway #3 along with County Rd. 20, 23, 31 and 34 are the main route used by those traveling between Leamington, Harrow and Essex • Volumes of traffic flow across the highways and county roads each day. • High number of MVCs along the roadways. • Lack of fire hydrants close to highways will result in delays in setting up water supply for fighting fires that may occur. • Traffic congestion created by an incident on the highways can impede responding apparatus. • High risk of significant motor vehicle collisions (MVCs) occurring with the potential of injuries. • Long duration closures of highways/roads/streets will impact traffic within the municipality as detour routes are established resulting in increased traffic gridlock. • There is a high volume of large trucks transporting goods into and out of the area. • Unknown number of loads that may contain hazardous materials. • The municipality is proactive in maintaining its road infrastructure with numerous construction projects initiated each year to improve the condition of existing streets and plan for future streets. • The use of traffic pre-emption emitters at strategic intersections to change traffic lights in the favour of fire vehicles can aid in reducing response times. • Any future proposed installation of traffic circles in the town must be of adequate size, not to impede the response of fire apparatus.
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2. Building Stock Profile

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

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

Older buildings typically do not contain the same fire safety and fire protection systems required in newer buildings. This may impact the fire risk in older buildings. Also, how buildings are used can influence the fire risks in each building. For example, industrial

chemical storage facilities are likely to present higher fire risks than buildings containing commercial retail activities. The age and type of residential buildings (e.g., high-rise vs. single family dwelling vs. town/row houses) can influence the probability and consequence of fire in those buildings.

Table 3: Buildings in Kingsville

OBC Occupancy Classification	Major Building Classifications	Number of Occupancies	Percentage of Occupancies
Group A	Assembly Occupancies	44	< 0.5%
Group B	Care or Detention Occupancies	14	< 0.5%
Group C	Residential Occupancies	8,285	86.15%
Group D/E (Combined)	Business/Mercantile	175	1.78%
Group F (all Divisions combined)	Industrial Occupancies	170	1.77%
Other	Farm / Greenhouses	929	9.65%
Total	Total Building Classifications	9,617	100.0%

Source: Town of Kingsville

Table 4: Residential Occupancies in Kingsville

Occupancies	Total
Single-detached house	6,880
Semi-detached house	325
Row house	525
Apartment or flat in duplex	75
Apartment in a building that has less than 5 stories	430
Apartment in building that has 5 or more stories	3
Other single-attached house	5
Movable dwelling	50
TOTAL Occupied private dwellings	8,285

Source: Statistics Canada – 2021 Census

Building Stock Profile Risks

Building stock/occupancy types in our community and the fire and other emergency issues/concerns for each.

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

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
Group B	Care and Treatment/ Care	<ul style="list-style-type: none"> Elderly residents with mobility and cognitive behavioral issues High occupancy May be lacking facility staff during evening and night shifts. Increased building construction for seniors indicates an increase in the aged demographic. Staff may not be familiar with emergency evacuation procedures or lack practice. Significant turnover of staff may mean some may be delayed in receiving emergency protocol training. Kingsville has 13 vulnerable occupancies in the Town. 	Possible	Major	Moderate risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
Group C	Single Family	<ul style="list-style-type: none"> • May be a lack of working smoke and carbon monoxide (CO) alarms. • May have smoke and CO alarms that are past their recommended life span. • May lack a home escape plan. • Many aged structures. • Some older buildings may be made using balloon construction practices. • Hoarding or poor housekeeping practices. • High fire load • Lack of distance between structures – exposure risks • BRLH – farm workers – approx. 253 that are known • This occupancy experiences most of the fires in the Town. • Unidentified number of second units. 	Almost certain	Major	High risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<ul style="list-style-type: none"> • Increase in housing within the municipality increases demands on the fire service as a whole. • Property owners may not understand their responsibilities regarding fire safety and fire code. • KFRS should assess its Fire Prevention and Enforcement resources with regards to having adequate staffing to inspect secondary dwelling units in the municipality. • May see the addition of approx. 1300 residential living units in Kingsville over the next 10 years to meet the <i>More Homes Built Faster Act, 2022</i> • Building stock growth may result in an additional 4,000 residents. 			

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

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

Building Stock Profile Risks

Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<ul style="list-style-type: none"> Numerous floors to travel up with no dedicated firefighter’s elevator. Include bed and breakfast facilities in this category. If from out of the country, may not be aware of what the fire alarm sounds like or the procedures to follow (i.e., language barriers possible). KFRS is not trained in conducting elevator rescues, with more being installed in newer buildings 			
Group C	Mobile Homes & Trailers	<ul style="list-style-type: none"> High combustibility due to construction materials. High fire loads and, in some cases, hoarding. Seasonal usage or potentially year round May lack smoke and CO alarms. Limited access routes. Lack of fire separation between trailers. 	Unlikely	Moderate	Moderate risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
		<ul style="list-style-type: none"> Use of propane cylinders for heat and cooking may be a possible explosive hazard. 			
Groups D & E	Business & Personal Service	<ul style="list-style-type: none"> Small local business Possibly heavy timber construction or common basements or attic spaces Have not had any fires in this occupancy classification between 2019 and 2023 	Possible	Major	Moderate Risk
	Service/ Mercantile	<ul style="list-style-type: none"> High fire loads Structures that are continually against each other (e.g., main street) May lack sprinklers. May lack pre-incidents plans Staff may not be familiar with building's services or layout. May, lack monitored fire alarms. May be missing or vandalized fire extinguishers. 	Possible	Major	Moderate risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
Group F	Industrial	<ul style="list-style-type: none"> • May lack current emergency plan for the occupancy. • May lack pre-incident plans • High fire loads • Lack of sprinklers and fire alarm systems (may not have been required by code at time of build). • Lack structural fire breaks with multiple lines of manufacturing or add on to buildings • May lack access around entire building on the outside. • Unknown quantities of chemicals could be on-site as part of the manufacturing/refurbishing processes. 	Possible	Major	Moderate risk

Building Stock Profile Risks					
Occupancy Classification		Issues/Concerns	Probability	Consequence	Assigned Risk Level
Other	Occupancies not classified in OBC such as farm buildings	<ul style="list-style-type: none"> • High fire loads (e.g., combustibles, farm equipment). • The lack of fire separations in driving sheds and barns allows for fires to easily spread throughout the structure. • Extremely large in size can impact time to find incident on site • Lack of fire stops • Structures in proximity to each other become exposure risks. • Poor housekeeping practices • Many vacant abandoned structures • Farm structures being used for non-intended purposes (e.g., illegal drug activity). • Most farms lack fire safety plans. • Lack of water supply close by for fire suppression operations. 	Possible	Major	Moderate risk

3. Critical Infrastructure Profile

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

Critical Infrastructure Profile Risks

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

Critical Infrastructure Profile Risks	
Identified Critical Infrastructure	Issues/Concerns/Operations
Food Distribution	<ul style="list-style-type: none"> • Essential food supply • Supply broken due to power outages which could equate to commerce disrupted. • Should promote the installation of generators to limit food spoilage in the event of the loss of power.
Food and Water Inspection & Monitoring	<ul style="list-style-type: none"> • Health inspectors • Inspection systems • Mass notification, testing, and instructions to the public
Water	<ul style="list-style-type: none"> • Municipal water supply breakdown/ disruption • Water contamination • Water is obtained from Lake Erie. • Large diameter water transmission mains.
Water Distribution within the Municipality	<ul style="list-style-type: none"> • Supply pipeline failure • Distribution systems failure • Pumping/booster station failure • Monitoring systems failure • Hydrants out of service • Sabotage or terrorism to the pumping stations • Above and below ground reservoirs. • Greenhouse operators that require copious amounts of water.

Critical Infrastructure Profile Risks	
Identified Critical Infrastructure	Issues/Concerns/Operations
	<ul style="list-style-type: none"> • Water pipe failure due to age of pipes used in the rural area. • Infrastructure growth required to sustain continued growth to the west for many years to come.
Water Treatment	<ul style="list-style-type: none"> • Chemical identification (i.e., chlorination systems) • Chemical storage and quantities • Distribution systems • Security of treatment plants and pumping station • Sabotage or terrorism
Wastewater and Storm Sewer Systems	<ul style="list-style-type: none"> • Collection systems, storm sewer management • Wastewater treatment facilities • Chemicals stored and used in process • Sewage lagoons • Numerous pumping stations for both wastewater and sewage.
Water Distribution	<ul style="list-style-type: none"> • Bottled water in bulk supply if required due to system failure. • Ensure the availability of large quantities on short notice, in case of an emergency.
Garbage	<ul style="list-style-type: none"> • Debris removal and collection after severe weather event
Pharmacies	<ul style="list-style-type: none"> • Several pharmacies located in Town • Significant quantities of medications on location • May have restricted access to some areas of the building
Hydro One and ELK Hydro Utilities	<ul style="list-style-type: none"> • Distribution lines • Distribution system • Transformer stations

Critical Infrastructure Profile Risks	
Identified Critical Infrastructure	Issues/Concerns/Operations
911 Communications (i.e., Public-Safety Answering Point (PSAP) operated by: Northern 911, located in North Bay)	<ul style="list-style-type: none"> • Centre's location • Main operating equipment • Back up equipment and location • Security, public safety answering point for the municipality. • Next-generation 9-1-1 requirements
Kingsville Fire Rescue Service Radio System	<ul style="list-style-type: none"> • Dispatching services provided by LaSalle Police Department, who also dispatches their own fire and police services • Operational equipment • Repeaters • Control equipment • Antenna • Cabling • Connections to communications Centre • Redundancy of antenna and repeater for Radio system. • Emergency back-up power • There is a lack of radio inter-operability communications between the emergency services in Essex County. • Due to the high risk of significant weather events, fires, or other emergencies, this means of communication should be reviewed at the earliest opportunity by the emergency services involved.
Central Ambulance Communications Centre (CACC), located in Windsor	<ul style="list-style-type: none"> • Control equipment • Repeaters • Antenna • Cabling • Interagency Communications • Provincial Common Radio Frequency
Essex Windsor EMS Services	<ul style="list-style-type: none"> • One base in Kingsville. • Several other bases throughout Essex County • May have limited supply of medications stored in facilities • May have limited available units which would require assistance from KFRS.

Critical Infrastructure Profile Risks	
Identified Critical Infrastructure	Issues/Concerns/Operations
Town of Kingsville – Information Technology Services	<ul style="list-style-type: none"> Information technology includes servers, applications, web hosting, phone systems (cell and landline), data communications, document storage, databases
Telephones – Landline	<ul style="list-style-type: none"> Wires, towers, repeaters, sub-stations, data lines, internet, Emergency Operations Centre (EOC), and police phone systems Town of Kingsville phone and data lines Fiberoptics
Telephones – Wireless	<ul style="list-style-type: none"> Towers, repeaters, wireless data Numerous providers
Internet Providers	<ul style="list-style-type: none"> Numerous internet service providers through Kingsville. Towers and infrastructure
Banks and Financial Institutions	<ul style="list-style-type: none"> Access to cash withdrawals Phone line breakdowns impeding commerce and financial transactions Located primarily in Kingsville town limits
Chamber of Commerce	<ul style="list-style-type: none"> Hub for local businesses
Natural Gas Transmission Systems	<ul style="list-style-type: none"> Residential, commercial, and industrial supply Main supply pipeline location Gas main infrastructure of numerous pipe sizes Enbridge is the main supplier
Liquefied Petroleum Gases <i>Propane</i>	<ul style="list-style-type: none"> Propane storage facilities could have large quantities of product on site. Tank refill depots locations. Large tanker trucks on roads system that bring product to refill depot tanks. Homes and businesses may have on-site propane tanks for heating. If leak occurs and does not dissipate easily, stays close to the ground Fuel for forklifts, automobiles, and BBQs. Many applications of use in residential and industrial settings. May be incidents of improper transportation and storage of smaller 10 and 20 lb tanks. BBQ fires involving tanks that may not have been installed properly.

Critical Infrastructure Profile Risks	
Identified Critical Infrastructure	Issues/Concerns/Operations
Abandoned Oil and Gas Wells	<ul style="list-style-type: none"> • Land Information Ontario, there are over 250 abandoned wells located in the Town of Kingsville. • Pre-incident planning and public education is needed • Establish partnerships and procedures before an incident occurs
Municipality's Road Infrastructure	<ul style="list-style-type: none"> • Thoroughfares, bridges, side streets • High volumes of traffic during summer months • Long duration closures due to MVCs • Traffic gridlock at times during holiday weekends in the summer months. • As population increases so does the traffic on the network of roads. • There are currently no plans for the use of roundabouts / traffic circles, in any new residential developments.
Federal Government Buildings (e.g., Canada Post)	<ul style="list-style-type: none"> • Multiple locations • Services provided at that location • On-site security
Provincial Resources	<ul style="list-style-type: none"> • Identification equipment • Facilities • Staffing • Capabilities • Locations • Hazard specific emergency plans/protocols • Activation protocols
Ontario Provincial Police (OPP)	<ul style="list-style-type: none"> • Equipment • Staffing • Vehicles • Security • Capabilities of normal staffing 24/7. • Integration capabilities • Back-up capacities • Support systems • Back-up communications centre • Transmission equipment • Radio transmission towers • Crisis communications plan

Critical Infrastructure Profile Risks	
Identified Critical Infrastructure	Issues/Concerns/Operations
Kingsville Fire Rescue Services	<ul style="list-style-type: none"> • Multiple locations (2 fire stations) • Equipment • Staffing • Vehicles and fleet maintenance • Security • Facilities • Capabilities • Integration capabilities • Back-up capacities • Support systems

4. Demographic Profile

Municipal services, including fire protection, should be tailored to the community with the understanding that a town has multiple communities within its borders (Kingsville, Cottam, Ruthven). There is a need to examine and understand the demographics of the community to provide appropriate services.

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

Awareness and understanding of unique needs and circumstances gained from the various demographics in Kingsville helps ensure fire protection, in accordance with the “*Three Lines of Defence*”, is delivered in the most relevant and meaningful ways with the greatest positive impact.

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

The data found in this profile has been sourced and collected from the Government of Canada’s 2021 Census

Table 5: Demographic Numbers by Age

Ages of population	# of People	% of Total Population
0-4	1,055	4.77%
5-9	1,190	5.38%
10-14	1,325	5.99%
15-19	1,280	5.79%
20-24	1,145	5.18%
25-29	1,195	5.40%
30-34	1,230	5.56%
35-39	1,275	5.76%
40-44	1,340	6.06%
45-49	1,345	6.08%
50-54	1,375	6.22%
55-59	1,610	7.28%
60-64	1,675	7.57%
65-69	1,560	7.05%
70-74	1,425	6.44%
75-79	900	4.07%
80-84	565	2.55%
85 and over	625	2.83%
Total Population	22,120	100%

Table 6: Population Distribution

Total – Distribution (%) of the population by broad age groups	100 %	Male	Female
	22,120	11,115	11,005
0 to 14 years	3,575	1,835	1,740
15 to 64 years	13,465	6,915	6,550
65 years and over	5,080	2,370	2,710
85 years and over	625	250	380
Average age of the population	43.8	42.7	44.9
Median age of the population	45.2	42.8	47.2

Table 7: Education

Total – Highest certificate, diploma or degree for the population aged 15 years and over in private households	Total 17,620	Male 8,750	Female 8,875
No certificate diploma or degree	3,805	2,130	1,685
Secondary (high) school diploma or equivalent certificate	5,390	2,665	2,730
Postsecondary certificate, diploma, or degree	8,730	4,170	4,570
Apprenticeship trades certificate or diploma	1,230	895	335
Trade’s certificate or diploma other than Certificate of Apprenticeship or Certificate of Qualification	530	305	220
Certificate of Apprenticeship or Certificate of Qualification	700	585	110
College, CEGEP or other non-university certificate or diploma	4,280	1,910	2,375

Table 8: Employed Labour Force by Industry Sectors

Industry Sectors	Number Employed	Percentage
Total - Labour force aged 15 years and over by occupation - Broad category - National Occupational Classification (NOC) 2021 - 25% sample data	10,680	100.0%
Occupation non-applicable	110	1.02%
All occupations	10,570	98.9%
Management occupations	115	1.07%
Business, finance, and administration occupations	1,470	13.76%
Natural and applied sciences and related occupations	550	5.15%
Health occupations	720	6.74%
Occupations in education, law and social, community and government services	1,120	10.49%
Occupations in arts, culture, recreation, and sport	170	1.59%
Sales and service occupations	2,470	23.13%
Trades, transport and equipment operators and related occupations	2,365	22.14%
Natural resources, agriculture, and related production occupations	685	6.41%
Occupations in manufacturing and utilities	905	8.47%

Understanding the characteristics of the community assists the fire department to determine if specific segments of the population are at high-risk of fire instances or higher risk of fire related injury and to tailor public education and prevention/enforcement activities accordingly.

The groups in Kingsville that potentially are of concern related to fires and other emergencies can be found listed below.

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

Demographic Profile Risks	
Identified Demographic Group	Issues/Concern
Seasonal Agricultural Worker Population	<ul style="list-style-type: none"> • Language barriers • May lack, knowledge on fire safety matters. • May lack fire escape plan. • Require multi-language-cultural fire safety brochures and signage. • Between 3600 – 4000 seasonal workers come to the community each year. • May not be familiar with building fire safety systems. • Require public education on safe cooking practises.
General Population	<ul style="list-style-type: none"> • Population continues to grow as more development occurs • Population growth estimation of approximately 3000 - 3250 new residents between 2022 and 2031 • Increased population will result in an increase in fire call volume. • Increased drug related medical events Province wide, thus may see an increase in the number of medical calls. Increase in pedestrians, cyclists, distracting drivers, and disregard for the movement of emergency vehicles. • With the increase of residents, there is also an increase in the number of those that may suffer from mental illness. It is noted that malicious false alarms have originated by these individuals for unknown reasons.
Senior's population	<ul style="list-style-type: none"> • There is 6755 seniors living in the community (above age 60). • There are five large vulnerable sector occupancies in Kingsville • Some of the seniors will have mobility and cognitive/behavioral issues that may require constant care. • Lack of personal care workers during evenings and nights. • May lack, knowledge of escape routes due to mental confusion.

5. Hazard Profile

Potential hazards in the community include but are not limited to hazardous materials spills, floods, freezing rain/ice storms, forest fires, hurricanes, tornadoes, transportation emergencies (e.g., air, road), snowstorms, windstorms, extreme temperature, cyber-attacks, human health emergencies, and energy supply (e.g., pipelines, storage and terminal facilities, electricity, natural gas, and oil facilities).

Hazard Profile Risks

The list of potential hazards are assigned a probability, consequence and level for each specific risk.

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

Hazard Profile Risks			
Identified Hazard	Probability	Consequence	Assigned Risk Level
Drought – Low Water	Rare	Minor	Low
Potable Water Emergency – Wells	Rare	Minor	Low
Potable Water – Municipal Water System- Failure/Haz-Mat/Sabotage/Terrorism	Rare	Major	Moderate
Waste-Water Treatment Plant – Failure/Haz-Mat/Sabotage/Terrorism	Rare	Major	Moderate
Emergency Water Supply – Bottled Water Required	Rare	Moderate	Low
Critical Infrastructure Failure – Continuity of Government	Possible	Moderate	Moderate
Influenza Outbreak	Possible	Major	High
Road Incident – Mass Casualty	Likely	Minor	Moderate
Cyber Attack on Municipal Servers	Possible	Major	Moderate
Earthquake	Rare	Minor	Low
Severe Thunderstorm	Almost Certain	Moderate	High
Erosion	Rare	Minor	Low
Large Fire	Likely	Major	High
High Angle Rescue	Unlikely	Minor	Low
Trench Rescue	Unlikely	Major	Moderate

Hazard Profile Risks			
Identified Hazard	Probability	Consequence	Assigned Risk Level
Special Events (e.g., Fire Scene Crowd Control, Stage/Viewing Stands Collapse)	Rare	Moderate	Low
Mail Delivery	Rare	Minor	Low
Civil Disorder – Riots, labour disputes, sports team win/losses, etc.	Unlikely	Minor	Low
Active Threat	Rare	Major	Moderate
Motor Vehicle Collisions	Almost Certain	Moderate	High
Aircraft Crash	Possible	Major	Moderate
Terrorism & Sabotage – Hostage taking, chemical attack, critical infrastructure attack,	Unlikely	Major	Moderate
Hazardous Materials Incident – Fixed Location	Possible	Moderate	Moderate
Hazardous Materials Incident - Transportation	Likely	Moderate	Moderate
Structural Collapse	Possible	Major	Moderate
War/International Emergency	Unlikely	Insignificant	Low
Fog – Poor Visibility	Almost Certain	Minor	Moderate
Radioactive Emergency	Unlikely	Minor	Low

Hazard Profile Risks			
Identified Hazard	Probability	Consequence	Assigned Risk Level
Human Health – Epidemic	Likely	Catastrophic	High
Human Health – Pandemic	Possible	Catastrophic	High
Substance Abuse/Overdose	Almost Certain	Insignificant	Moderate
Plant Disease and Pest Infestation	Unlikely	Minor	Low
Farm Animal Disease	Unlikely	Minor	Low
Geometric Storm/Solar Flares	Rare	Major	Moderate
Landslide	Rare	Insignificant	Low
Natural Space Object Crash	Rare	Insignificant	Low
Human Made Space Object Crash	Rare	Insignificant	Low
Transportation Emergency – Marine	Rare	Insignificant	Low
Large Explosion and Resulting Fire (e.g., natural gas line rupture, fuel storage depot failure, training derailment)	Possible	Major	Moderate
Worksite Strike/Labour Disruption	Likely	Minor	Moderate
Vandalism/Security Breach/ Criminal Activity	Possible	Moderate	Moderate
Workplace Violence	Likely	Moderate	Moderate
Health & Safety Incidents	Likely	Minor	Moderate

6. Public Safety Response Profile

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

Public Safety Response Profile Risks

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

Public Safety Response Profile Risks			
Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role at the Incident	Issues/Concerns
Ontario Provincial Police	<ul style="list-style-type: none"> • MVCs on network of roads/streets. • Fire scenes • Acts of crime • Acts of violence • Acts of terrorism • Any time the Emergency Response Plan is initiated • Security of dignitaries • Medium Urban Search & Rescue (MUSAR) <ul style="list-style-type: none"> - Major structural collapse - Tornadoes - Severe weather 	<ul style="list-style-type: none"> • Scene control, traffic control, investigations • Establish perimeters. • Provide marine support. • Protective services • Canine services • Search & rescue <p>CBRNE support team</p>	<ul style="list-style-type: none"> • Low Staffing • Limited availability for non emergency after hours • Shared resource with other Municipalities • Low level of community connection

Public Safety Response Profile Risks			
Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role at the Incident	Issues/Concerns
Essex Windsor EMS Services	<ul style="list-style-type: none"> • Medical calls • Fire stand-by • Acts of violence • Acts of terrorism • Mass casualty • Any time the Emergency Response Plan is initiated 	<ul style="list-style-type: none"> • Take control and provide direction, upon arrival, in the treatment of the sick and injured. • Triage patients at mass casualty incidents • Transport sick and injured to medical facilities • Liaise with local hospitals on patient condition 	<ul style="list-style-type: none"> • Formal response agreement in place. <p>The current medical tiered response agreement has been in place since 2015 and should be updated.</p>
Outside Fire Services (Neighboring municipalities)	<ul style="list-style-type: none"> • Mutual Aid Incidents • Respond to structure fires with tanker support if lack of hydrants 	<ul style="list-style-type: none"> • Fire Suppression • Provide staffing and equipment as requested. • Perform all duties that may be requested of them by the KFRS Incident Commander (IC). • May provide emergency coverage until KFRS is able to back fill stations while crews recalled. • KFRS has mutual aid agreements in place. 	<ul style="list-style-type: none"> • Evaluate option for Automatic Aid agreements • Any agreement should meet the needs and circumstances of the residents living in the response area, of that agreement.

Public Safety Response Profile Risks			
Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role at the Incident	Issues/Concerns
Canadian Red Cross	<ul style="list-style-type: none"> • Public events in which large number of people in attendance • Major incidents where people are displaced from their homes 	<ul style="list-style-type: none"> • Supporting KFRS at public events and extreme disasters • Sheltering and connecting family members • Provide emergency and disaster services (e.g., temporary shelter, food, clothing) 	<ul style="list-style-type: none"> • None known
Ontario Fire Marshal Office (OFM)	<ul style="list-style-type: none"> • Suspicious fires • Any fire in which there is either a civilian or firefighter fatality. • High dollar loss fires • Fires at vulnerable occupancies • Incidents that require a provincial specialty team such as HAZMAT (hazardous materials), CBRNE (chemical, biological, radiological, nuclear, explosives), HUSAR (heavy urban search and rescue) 	<ul style="list-style-type: none"> • Investigation – Lead agency working in conjunction with the police. • Provide technical support 	<ul style="list-style-type: none"> • None known

Public Safety Response Profile Risks			
Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role at the Incident	Issues/Concerns
Transport Canada	<ul style="list-style-type: none"> Respond to transportation accidents involving some road vehicles, along with all rail, marine and aviation incidents 	<ul style="list-style-type: none"> Take the lead investigation role in many transportation accidents with support of other agencies. Many transportation regulations are the department's responsibilities to develop and monitor. The findings of these investigations may lead to changes in some of the transportation regulations. Canadian Transport Emergency Centre aids the emergency response and 	<ul style="list-style-type: none"> None known
Trenton Search and Rescue – Joint Rescue Co-Ordination Centre Trenton / Canadian Coast Guard	<ul style="list-style-type: none"> Marine search and rescue Navigational or transportation emergencies in Canadian waters Ice breaking to free vessels 	<ul style="list-style-type: none"> Respond to support local emergency services in the stabilization of the scene Work collaboratively with other government agencies both Canadian and American 	<ul style="list-style-type: none"> Distance for Response Coast Guard Cutter in Amherstburg Auxillary Boat in Colchester Air Support in Trenton

Public Safety Response Profile Risks			
Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role at the Incident	Issues/Concerns
Kingsville Fire Rescue Service	<ul style="list-style-type: none"> • Fires • MVCs • Technical rescues <ul style="list-style-type: none"> ○ Surface Water –Technician Level in accordance with NFPA 1670 ○ Ice Rescue – Technician Level in accordance with NFPA 1670 ○ High angle rope – Not provided ○ Low angle rope – Awareness Level in accordance with NFPA 1670 ○ Confined space – Awareness Level in accordance with NFPA 1670 ○ Trench Rescue – Awareness Level in accordance with NFPA 1670 • Tiered medical – VSA and unconscious patients only • Hazardous materials incidents – Awareness level • Public Education • Flooding 	<ul style="list-style-type: none"> • Suppress and extinguish fires. • Fire cause determination • Perform rescues. • Property conservation • Vehicle extrication, including farm equipment. • Assist other, emergency response agencies. • Assist with evacuations. 	<ul style="list-style-type: none"> • KFRS Firefighters are required to be trained and certified to the NFPA standards specific to each discipline. This is not only time consuming but costly due to turn over • KFRS has a volunteer staff complement of 55 firefighters. Turnover rate of volunteer firefighters is approximately 10 staff per year • KFRS is a member of the Essex County Mutual Fire Aid Agreement adopted by By-Law permitting their participation

Public Safety Response Profile Risks			
Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role at the Incident	Issues/Concerns
Technical Standards & Safety Authority (TSSA)	<ul style="list-style-type: none"> • Fires and explosions that involve fuel fired appliances such as gas kitchen appliances, furnaces, hot water heaters, barbeques, gas fireplaces, etc. • Gas leaks that involve pressurized vessels and pipelines • Carbon monoxide leaks • Boilers and pressurized vessel failures • Elevator and amusement park ride failures 	<ul style="list-style-type: none"> • Investigations relating to cause and origin. • Investigations that involve the failure of a pressurized vessel (e.g., boilers, LPG tanks) • Assist other agencies during investigations. • Assist with enforcement. • Technical support 	<ul style="list-style-type: none"> • None known
Electrical Safety Authority	<ul style="list-style-type: none"> • Fires that involve electrical equipment 	<ul style="list-style-type: none"> • Assist with fire investigations • Electrical code enforcement 	<ul style="list-style-type: none"> • None known
Hydro One and ELK Utilities	<ul style="list-style-type: none"> • Downed power lines • Severe weather events • Structure fires • Industrial accidents for disconnecting the power 	<ul style="list-style-type: none"> • Terminate power supply on transmission systems as required. • Reinstate power supply as required 	<ul style="list-style-type: none"> • Aging Infrastructure • Limited local resources

Public Safety Response Profile Risks			
Identified Public Safety Response Agency	Types of Incidents They Respond To	What is their Role at the Incident	Issues/Concerns
Union Gas	<ul style="list-style-type: none"> • Respond to gas leaks involving their transmission equipment. • Carbon monoxide detection • Severe weather events 	<ul style="list-style-type: none"> • Mitigation of a gas leak • Investigation of incidents that involve the Union Gas infrastructure. • Investigate the source of CO. • Assist other agencies as required, during fire investigations 	<ul style="list-style-type: none"> • Aging Infrastructure • Outsourcing emergency response to Lakeside Gas

7. Community Service Profile

Considers community service agencies, organizations or associations that provide services that support the fire department in the delivery of public fire safety education, Fire Code inspection and enforcement, and emergency response. This may include services in-kind, financial support, provisions of venues for training, increased access to high-risk groups in the community, and temporary shelter for displaced residents following an incident.

Community Service Profile Risks		
Community Service Agencies	Types of Assistance They Can Provide	Issues/Concerns
Canadian Red Cross	<ul style="list-style-type: none"> • Emergency Housing • Food • Emergency purchases (e.g., clothing, toiletries, food, etc.) 	None known
County of Essex – Community Emergency Management Coordinator (CEMC)	<ul style="list-style-type: none"> • Assist with those residents during emergency evacuations. • Arrange for buses for temporary shelter or transportation • Assist with coordinating mass reception centers. 	None known
Kingsville Food Bank	<ul style="list-style-type: none"> • Emergency supply of food 	None known
City of Windsor’s Human and Health Service Dept.	<ul style="list-style-type: none"> • Housing • Registration of evacuees • Clothing • Personal services (counselling, language interpretation) • Financial support 	None known
Windsor Essex County Health Unit	<ul style="list-style-type: none"> • General well being support. • Continuous improvement in the quality of services and programs with all efforts oriented to meet the specific needs of the people and communities being served. • Design services and programs to reduce health disparities and inequities. 	None known
Enbridge Gas	<ul style="list-style-type: none"> • Provide donations of smoke and carbon monoxide alarms for residential dwelling units 	None. Requires program application for consideration of donation

8. Economic Profile

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

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

The following are the industrial or commercial occupancies that provide significant economic value in the community. The following lists the fire or other emergency risks in each occupancy. These are assigned a probability, consequence, and risk levels for each sector identified.

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

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

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

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

9. Past Loss and Event History Profile

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

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

The details provided evaluates previous response data to identify trends regarding the circumstances, behaviours, locations, and occupancy types of previous fires. This assists in determining the leading causes or behaviours resulting in fires, and high- risk locations and

occupancies. Public fire safety education and Fire Code inspection and enforcement programs can then be designed to specifically target high-risk behaviours among various population groups and to focus prevention activities on high-risk neighbourhoods or locations. This targeted approach allows public fire safety education and Fire Code inspection and enforcement programs to directly address fire risks, thereby increasing their fire prevention effectiveness.

Table 9: Fire by Property Category

		2019	2020	2021	2022	2023
Total	Loss Fires	18	13	26	20	13
	Injuries	0	0	1	0	0
	Fatalities	0	0	0	0	0
	Est \$ Loss	577,375	534,000	4,126,999	2,073,501	824,200
	No Loss Fires	21	32	20	34	27
Structure	Loss Fires	7	7	18	14	6
	Injuries	0	0	1	8	0
	Fatalities	0	0	0	8	0
	Est \$ Loss	325,875	514,000	3,548,000	1,731,500	785,000
	No Loss Fires	2	6	3	1	4
Outdoor	Loss Fires	6	6	3	3	4
	Injuries	0	0	0	0	0
	Fatalities	0	0	0	0	0
	Est \$ Loss	190,500	10,000	100,000	226,000	10,200
	No Loss Fires	5	2	3	10	4
Vehicle	Loss Fires	5	1	5	3	3
	Injuries	0	0	0	0	0
	Fatalities	0	0	0	0	0
	Est \$ Loss	61,000	10,000	478,999	116,001	29,000
	No Loss Fires	0	0	2	3	5
No Loss – Unauthorized Open Burns	Loss Fires	0	0	0	0	0
	Injuries	0	0	0	0	0
	Fatalities	0	0	0	0	0
	Est \$ Loss	0	0	0	0	0
	No Loss Fires	14	24	12	20	14

Table 10: Municipal Fire Losses, Deaths, Injuries and Causes

		YEAR: 2021					YEAR: : 2022					YEAR: 2023				
		# of Fires	\$ Loss	# of Injuries	# of Deaths	Causes	# of Fires	\$ Loss	# of Injuries	# of Deaths	Causes	# of Fires	\$ Loss	# of Injuries	# of Deaths	Causes
Group A	Assembly	1	450,000	0	0	Undetermined	0	0	0	0	N/A	0	0	0	0	N/A
Group B	Detention/ Care & Treatment/ Care	0	0	0	0	N/A	0	0	0	0	N/A	0	0	0	0	N/A
Group C	Residential	2	20,000	1	0	Electrical	1	75,000	0	0	Electrical	1	600,000	0	0	Electrical
		5	793,000	0	0	Cooking	3	495,500	0	0	Cooking	2	185,000	0	0	Undetermined
		1	650,000	0	0	Undetermined	7	1,263,000	0	0	Undetermined					
	Mobile Homes & Trailers	0	0	0	0	N/A	0	0	0	0	N/A	0	0	0	0	N/A
Group D	Business & Personal Service	0	0	0	0	N/A	0	0	0	0	N/A	0	0	0	0	N/A
Group E	Mercantile	0	0	0	0	N/A	0	0	0	0	N/A	0	0	0	0	N/A
Group F	Industrial	2	1,510,000	0	0	Undetermined	0	0	0	0	N/A	0	0	0	0	N/A
Other –Structures/ Properties not classified by OBC		0	0	0	0	N/A	0	0	0	0	N/A	0	0	0	0	N/A
Properties classified under National Farm Building Code		1	35,000	0	0	Arson	2	171,000	0	0	Undetermined	2	10,200	0	0	Undetermined
		1	65,000	0	0	Handling										
		2	125,000	0	0	Undetermined										
TOTALS		13	3,648,000	1	0		13	2,004,500	0	0		5	795,200	0	0	

Table 11: Past Loss and Event History Profile – Non Fire Emergency Calls

Call Type	2021		2022		2023	
	# of Calls	%of the Total Calls	# of Calls	% of the Total Calls	# of Calls	% of the Total Calls
FIRE RESPONSE	47	13%	54	14%	40	10%
Loss Fire – Structures	20	6%	16	4%	5	1%
Loss Fire – Vehicles	7	2%	4	1%	8	2%
Outdoor Burning – Controlled	12	3%	20	5%	14	3%
No Loss (Outdoor) Fire	8	2%	14	4%	13	3%
NON FIRE RESPONSE	312	87%	310	86%	373	90%
CO False Alarms	30	8%	24	7%	21	5%
False Fire Calls	86	24%	110	30%	105	25%
Medical/Resuscitator Calls	42	12%	43	12%	35	8%
Other Response	49	14%	33	9%	36	9%
Pre-Fire Conditions	15	4%	26	7%	26	6%
Public Hazard	35	10%	23	6%	73	18%
Rescue	55	15%	51	14%	77	19%
Total	359		366		413	

Past Loss and Event History Profile Risks

This lists the risks/ causes for each occupancy type as well as non-fire emergency risk and assigns the probability, consequence and risk level to each identified.				
Occupancy Type/ Location/ Risk	Causes	Probability	Consequence	Assigned Risk Level
Group A – Restaurant	Fire	Possible	Major	Moderate
Group B – Vulnerable Occupancy	Fire	Possible	Major	Moderate
Group C – Residential high density (mid-rise)	Fire	Possible	Major	Moderate
Group C – Residential low density (single family dwellings)	Fire	Almost Certain	Minor	Moderate
Group F – Industrial	Fire	Likely	Major	Moderate
Group F – Industrial	Hazardous Materials Spills	Possible	Major	Moderate
Natural Gas / H2S Leak		Possible	Major	Moderate
Motor Vehicle Collisions		Almost Certain	Minor	Moderate
Medical Calls		Almost Certain	Minor	Moderate

Identifying Treatment Options for the Top Risks in the Community

The fire service should also ensure that operational policies and SOGs address the levels of service and activities required to address each risk. This includes setting goals and objectives and determining resources, training, equipment, activities, and programs required across each of the “*Three Lines of Defence*”.

The process of making informed decisions about the provision of fire protection services should include careful consideration of the following:

- Implementation of public fire safety education, Fire Code inspections and enforcement, and emergency response activities that are appropriate to address the causes, behaviours, or issues associated with identified risks.
- Capabilities and capacity of the fire department (e.g., financial and staffing resources, training, equipment, authority, etc.) that may be required to implement preferred treatment options.
- Strategic partners with common interests, available resources, or skill sets that could assist in addressing risks using the applicable risk assessment profiles.
- Establishing & Regulating By-laws, operational policies, and standard operating guidelines that reflect the fire protection services to be provided to address the identified risks.
- Establishment of goals and objectives, strategies, timelines, and evaluation for the proposed fire protection services to be provided.

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

Mandatory Profile	Top Risk or Issues/Concerns	Preferred Treatment Option	Risk Level
Geographic Profile	Creeks, Rivers, Streams, Retention Ponds and Wetlands	<p><i>Avoid and Mitigate Risk</i> – Maintain and update ice/water rescue training protocols, SOGs, policies and activities on an ongoing basis.</p> <p>Evaluate the need of updating equipment specific to shore based ice/water rescues</p>	Moderate

Mandatory Profile	Top Risk or Issues/Concerns	Preferred Treatment Option	Risk Level
Geographic Profile	Body of water (Lake Erie) Recreational / tourist activities	<p>Avoid and Mitigate Risk –Install signage at key locations of bodies of water identifying the risks of water bodies and thin ice.</p> <p>Use of social media networks to assist in educating the public on the dangers of being near/on water in both the summer and winter months.</p> <p>Educate seasonal residents on the importance of knowing their exact address so as not to delay fire service response.</p>	Moderate
Geographic Profile	Grass/ Wildland	Avoid and Mitigate Risk – Promote fire bans during drought events	Low
Geographic Profile	Agricultural Field Fires	Accept the Risk – Specialized fire response vehicles equipped for field fires.	Moderate
Geographic Profile	Provincial Highway/ County and Municipal Roads	<p>Accept the Risk– Specialty training for MVCs & HAZMAT Awareness level training</p> <p>Transfer Risk of HAZMAT response to specialized response organizations (ie. Windsor Fire)</p>	Moderate
Geographic Profile	Recreational Marine use/accidents	Transfer the Risk – nonlife/ major incidents to Coast Guard and/or O.P.P.	Low
Geographic Profile	Beach Area - Swimming	<p>Accept the Risk – Limited capabilities with specialized fire response watercraft. Specialized training required.</p> <p>Transfer Risk to O.P.P. or Canadian Coast Guard</p>	High

Mandatory Profile	Top Risk or Issues/Concerns	Preferred Treatment Option	Risk Level
Building Stock Profile	Downtown Core – Single & double story	<p>Accept the Risk – Develop protocols, aerial apparatus to deliver master streams and/or rescue to multi -story buildings</p> <p>Mitigate the Risk – preplanning and Routine Fire Inspections</p>	Moderate
Building Stock Profile	Farm Structures – Not Classified in the Ontario Building Code <ul style="list-style-type: none"> • Barns, sheds • Large operations (Greenhouses) • Buildings used for Commercial storage (Boats etc.) 	<p>Accept and Mitigate the Risk – Provide tanker shuttle for large water transportation using mutual aid etc.</p>	Moderate
Building Stock Profile	Larger Buildings – larger fire load <ul style="list-style-type: none"> • Assemble Occupancies (Churches) • Strip malls • Zehrs, Food Basic, IDA, Shoppers Drug Mart 	<p>Accept and Mitigate the Risk – Preplanning & Routine Fire inspections, multi- station response, utilize Mutual Aid, aerial apparatus to deliver elevated firefighting streams.</p>	Moderate
Building Stock Profile	Vulnerable Occupancies (14 Total)	<p>Mitigate the Risk – Annual VO inspections – Public education, preplanning for response and fire drills</p>	Moderate

Mandatory Profile	Top Risk or Issues/Concerns	Preferred Treatment Option	Risk Level
Building Stock Profile	Single Family Residential Dwellings - primarily light weight wood frame	Accept the Risk - Public Education Programs – By-law enforcement, open burning complaint firefighter response cost-recovery, Smoke / CO alarm inspections	High
Building Stock Profile	Seasonal Dwellings (BRLH) for offshore workers Seasonal Cottages/ rentals/ Air B&Bs	Accept the Risk – through routine fire inspections Avoid the Risk by focused public education activities Mitigate the Risk – though established annual business licensing	High
Building Stock Profile	Buildings greater than two story (Multi-unit Residential)	Accept the Risk – Routine Fire inspections, multi- station response, utilize Mutual Aid, aerial apparatus to deliver elevated firefighting streams.	Moderate
Building Stock Profile	Hotels/ Motels/Rentals	Accept the Risk – Develop protocols / aerial apparatus to deliver master streams and/or rescue to multi -story buildings, conduct Routine Fire Inspections Mitigate the Risk – Consider Developing business licensing and routine fire inspections	High
Critical Infrastructure Profile	Water - Hydrants	Avoid and Mitigate the Risk - All hydrants should be inspected and tested as required in Articles 6.6.5.2. through 6.6.5.7. of the Ontario Fire Code, and NFPA 24, Standard for the Installation of Private Fire Service Mains Out of service hydrants should be repaired and placed in service in a timely manner. KFRS should be notified of hydrants that are out of service and a time when they will be back in service.	Low

Mandatory Profile	Top Risk or Issues/Concerns	Preferred Treatment Option	Risk Level
Critical Infrastructure Profile	Natural Gas Disruptions	<p>Transfer the Risk - Loss of supply of natural gas in the event of transmission line breakages. Work with local service authorities to provide public education initiatives in such events.</p> <p>Ongoing risk of leaks/accidents involving distribution and use of natural gas.</p>	Low
Critical Infrastructure Profile	Propane Gas	<p>Transfer the Risk - Risk of leaks/accidents involving propane. Involve local suppliers in providing public education on proper means of transporting, storing, and connecting of hose lines.</p> <p>Promote safe BBQ and portable stove usage to prevent leaks and fires involving propane tanks.</p>	Low
Demographic Profile	Average age of residence continue to increase	Accept the Risk – Through targeted public education	Low
Demographic Profile	<p>Approx 539 Vulnerable Individuals in 14 care facilities</p> <p>Unknown number of vulnerable individuals living at home – Live at home seniors</p>	<p>Accept the Risk– Through targeted public education</p> <p>Mitigate the Risk – through mandated vulnerable occupancy inspections and annual fire drills</p>	Moderate
Demographic Profile	Influx of Cottagers/ Day trippers during summer	Mitigate the Risk – Public education programs and signage	Moderate

Mandatory Profile	Top Risk or Issues/Concerns	Preferred Treatment Option	Risk Level
Demographic Profile	Increase in seasonal agricultural worker population	Mitigate the Risk – Through targeted public education, preplanning and routine fire inspections	Moderate
Demographic Profile	High Density Condominiums – Many high-risk seniors	Accept the Risk – Through targeted public education, preplanning	Moderate
Hazard Profile	Mass casualty Event <ul style="list-style-type: none"> • Air / Marine Accident • Natural Disaster • Public Shooting/violence • Explosion 	Accept the Risk – provide training for mass casualty incidents Mitigate the Risk – Work with public safety partners to develop procedure and practices/ conduct simulated exercises	Moderate
Hazard Profile	Abandoned wells throughout the Town, including oil and gas wells which can pose a threat to life, property, local economy and environment if an explosion were to occur	Accept the Risk – Develop response protocols including multi-station response and utilizing Mutual Aid Develop targeted public education and preplanning	High
Hazard Profile	Building Collapse	Transfer the Risk – HUSAR	Moderate
Hazard Profile	Weather Event (tornado, ice and snowstorms, intense rainstorms, flooding)	Accept the Risk – Although these cannot be completely avoided, they can, in most cases, be predicted which will allow for public awareness through media releases. Promote the need for families to maintain 72-hours worth of food, drinking water, and cash in the event of losing power for long duration.	High

Mandatory Profile	Top Risk or Issues/Concerns	Preferred Treatment Option	Risk Level
Hazard Profile	Fire <ul style="list-style-type: none"> • Major Fire – Industrial/Assembly • Marine – Recreational Vessel/Marina 	Major Fire - Accept the Risk – Preplanning & aerial apparatus and utilize Mutual Aid Marine- Transfer the Risk – Specialty training and equipment required which KFRS does not have	Moderate
Public Safety Response Profile	OPP – Availability and Coordination at violent scene	Accept the Risk – Provide training for mass casualty incidents. Work with public safety partners to develop procedure and practices, simulated exercises	Low
Public Safety Response Profile	OPP Marine Vessel not readily available unless on patrol on Lake Erie	Accept the risk – Specialty watercraft required	High
Public Safety Response Profile	EMS –Capabilities at a Multi casualty major event	Accept the Risk – Provide training to KFRS staff on mass casualty incidents. Work with public safety partners to develop procedure and practices and simulated exercises	Low
Public Safety Response Profile	Public Utilities – Hydro/gas – Response time during evening and weeks are typically 1 hour plus	Accept the Risk – Work with partners for solution, and provide KFRS with awareness level training	Low
Public Safety Response Profile	Marine Response from Coast Guard from Harrow typically 1 hour response	Accept the risk – Specialized watercraft required for searches on Lake Erie. KFRS resources are limited	High
Public Safety Response Profile	Helicopter support for ice/water ops from USCG – 1 plus hours away.	Accept the Risk – maintain ice rescue training, equipment, and procedures	Moderate

Mandatory Profile	Top Risk or Issues/Concerns	Preferred Treatment Option	Risk Level
Public Safety Response Profile	Kingsville Fire Rescue Service – Daytime firefighter availability	<p><i>Avoid and Mitigate the Risk</i> – KFRS has limited availability of personnel to respond to emergencies Monday to Friday from 8 a.m. to 5 p.m. not unlike many fire services in Ontario. Between 2021 and 2023 48% of the total call volume each of these years have been during this timeframe.</p> <p>With the prevalence of low attendance during the daytime hours, full time administration play a key role in covering off the shortfall of responders.</p> <p>KFRS focuses firefighter recruitment and retention program on attracting new volunteer firefighters who are available during daytime hours yet staffing turnout remains low.</p> <p>Long term staffing plans should focus on establishing consistency with reliable daytime staff to supplement our volunteer firefighters.</p>	High
Public Safety Response Profile	Kingsville Fire Rescue Service – Radio Communication	<p><i>Mitigate the Risk</i> – KFRS current radio system is a stand alone system with no operability with other county / city fire services.</p> <p>Focus should be on transitioning to the radio system that is used by most/ all other fire service partners</p>	Moderate
Past Loss and Event History Profile	Fireworks Bylaw 49-2013	<p><i>Avoid and Mitigate the Risk</i> – The fireworks bylaw was last updated in 2013. This bylaw should be reviewed and updated to current Provincial and Federal standards.</p>	Low

Mandatory Profile	Top Risk or Issues/Concerns	Preferred Treatment Option	Risk Level
Past Loss and Event History Profile	Open Air Burning Bylaw 57-2019	<i>Avoid and Mitigate the Risk –</i> The open air bylaw was developed in 2019. This bylaw should be reviewed and updated.	Moderate
Past Loss and Event History Profile	Fire Origin and Cause Determination	<i>Avoid and Mitigate the Risk –</i> Three of our Chief officers and Prevention staff are trained to NFPA 1033, <i>Standard for Professional Qualifications for Fire Investigator</i> , on fire cause and origin determination. With arson and undetermined fires being noted causes over the last three years, it would be in the Department’s interest to ensure some of the Operations Officers and Captains are also trained. Between 2021 and 2023, 67% of the fires were deemed undetermined in cause. Having additional members on scene that are trained to assist with investigations could help with future education efforts in mitigating fires.	Moderate

Conclusion

All of the ‘Risks’ identified above have identified suggested options for Kingsville to consider when setting the type and level of fire protection services for the community. After considering the risks, a preferred treatment option (e.g., avoid the risk, mitigate the risk, accept the risk, or transfer the risk) must be identified. Once the municipality has determined the preferred treatment option for each risk, they can plan and implement activities that address these risks. The “*Three Lines of Defence*” must be considered in terms of addressing each risk identified above. Currently the fire department’s resources, staffing levels, training, equipment, and authority allows for certain risks to be immediately addressed. A properly resourced fire service that addresses the risk and plans for the appropriate mitigation strategy will greatly reduce the danger to the community and firefighters.

The Fire Master Plan is a companion document to this CRA, and it will aid Kingsville as the council focuses on the ‘Level of Service’ for fire protection in the community. The next steps would be to complete the Fire Master Plan process to identify the best way to address each risk.