



TOWNSHIP OF ENNISKILLEN
COMMUNITY RISK ASSESSMENT

PROLUGE:

The Fire Marshal’s Office has historically recommended that each community prepare a simplified risk assessment. The purpose of the assessment was to create a process where local communities could identify public safety risks. The process was intended to assist in directing the fire protection services.

Regulation 378/18 has made it mandatory for municipalities to broaden the simplified Risk assessment into what is defined as a Community Risk Assessment. (CRA)
The regulation defines a list of profiles required to be incorporated within the CRA and requires completion no latter than July 1 2024.



Current Fire Service Description

The Township of Enniskillen (Township) provides fire protection services to its residents through two jointly managed volunteer fire departments.

The Oil Springs South Enniskillen department is operated with the Village of Oil Springs. The department provides coverage to 55% of the geographic area of the Township.

The Petrolia North Enniskillen department is operated with the Town of Petrolia. The department provides coverage of 45 % of the geographic area of the Township.

The Township is a participant in the County of Lambton mutual aid program.

The Township has entered into automatic aid agreements with the Municipality of Brooke-Alvinston and the Township of Dawn-Euphemia to provide reciprocal response to structure fires and vehicle accidents during the day light hours in the Oil Springs South Enniskillen Fire Area.

Geographic Profile

The Township of Enniskillen is located in central Lambton County.

The original surveys of the Township created a road system which was laid out geographically east/west and north/south. The roads are maintained by the County of Lambton and the Township. There are no railways or provincial highways in the Township.

The Township has a largely flat topography with a slope from north east to south west. Row crop farming covers most of the landscape. There is less than 12% of the land area in woodlots. Generally, the tree cover is located midway between the east west concession roads. The Township is drained by natural water courses Bear Creek, Durham Creek, Black Creek and Fox Creek. These water courses contain limited natural wet lands.

Several hundred kilometers of open and closed municipal drains provide drainage for the agricultural community. The Township maintains 57 road bridges over 3 meters in diameter and **119** smaller diameter culverts on municipal drains that cross municipal roads

Economic Profile

The primary economic activity within the Township is agriculture. Row crop farming of wheat, soya beans and corn make up the largest land area. Livestock farming is concentrated unto a few farms where chickens, turkeys, hogs and cattle are raised. Farm related structures include buildings for equipment storage, grain bins and livestock buildings.

The farm community currently provides a stable economic base.

Many residents of the Township commute to work to the petrochemical industry located in St Clair Township or Sarnia. Employment in the service sector within the local health networks and schools provides additional employment.

The Township has two hamlets Marthaville and Oil City. The hamlets have developed with low-density single-family dwellings.

Building Stock Profile

The residents of Enniskillen Township are largely located in single family dwellings distributed throughout the community. Within the hamlet areas of Marthaville and Oil City there are low density single family dwellings. The Lorne Henderson Conservation Park has 123 trailers occupied seasonally with an additional 32 transient camping sites at the park.

The farm operations in the Township are largely row crop agriculture with associated equipment storage and grain storage structures. There are approximately 20 active livestock buildings housing poultry, hogs and cattle.

There is currently one 13-acre greenhouse, one farm equipment dealership and one automobile dealership.

Although not listed as building stock there are four major natural gas pipelines located in the Township. There is one refined petroleum pipeline running through the Township. There are 9 historical oil producing sites within the Township. The oil is pumped from the ground and stored in tanks. The crude oil is transported by trucks to refiners in Sarnia.

Occupancy Classification		# of Occupancies
Group A	Assembly	2
Group B	Institutional	2
Group C	Single Family	1051
	Multi-unit residential	1
	Hotel/Motel	0
	Other	126
	Trailers/Mobile Homes	
	Permanent	125
Group D	Business Personal Service	7
Group E	Mercantile	0
Group F	Industrial	34
Other Occupancies not classified		
		1348

Building Stock Profile Concerns

The building stock profile indicates that Township residents are generally housed in single family dwelling units dispersed in a low-density pattern through-out the Township.

There are two hamlets consisting of single-family dwellings at Oil City and Marthaville. The Meadowview Villa nursing home and the Lambtonian apartment houses approximately 200 seniors many of whom have mobility issues. The two buildings are in close proximity to the Petrolia North Enniskillen Fire Department. Both buildings have access to fire flow. Both facilities have approved fire plans which are subject to inspection by the fire service.

The buildings associated with the farming community are largely designed for storage of equipment and grain. There are a small number of livestock producers housing chickens, hogs, turkeys and cattle.

The St Clair Region Conservation Authority operates a seasonal trailer park consisting of up to 155 camping sites of which 123 are seasonal.

A fire within the Township would normally require the hauling of water to support fire suppression. Both departments have tank trucks and would rely on other local municipal departments to supply supplemental water.

Demographic profile

Demographic Profile

Ages of Population	#	% of Population	Provincial Average % of Population
0-14	475	17	16
15-64	1690	60	66
65 and over	660	23	18
Total Population	2825	100	100

This chart provides the demographic profile of the population in comparison with the province as a whole. There has been a very small increase in the Township Census population from 2,795 to 2,825 between 2016 and 2021.

It should be noted that the Township has a higher percentage of its population over the age of 65 in comparison to the province 23.4% to 18.5%. This can be attributed to Lambton Meadowview Villa and Lambtonian Apartments. There is an increase in the number of people in the 0-14 and a reduction in the number of people in the 15-64 age groups in comparison to the 2016 census. These age cohorts both indicate a slightly younger population emerging in the Township.

The Township contains one trailer park operated by the St Clair Region Conservation Authority. The Lorne Henderson Park is operated from April 1 to Thanksgiving each year. The seasonal trailers are largely occupied by **non-residents**.

The Township contains one nursing home (Lambton Meadowview Villa) operated by the County of Lambton. The nursing home has capacity of 125 residents. Lambtonian apartments is a 50-unit two story apartment building for persons over 55 years of age.

The Lambton Kent District School Board operates one elementary school JK- 8 in the Township having capacity of up to 300 students. The current population at the school is around 250 students.

There are two child day care facilities within the Township that are located in the nursing home and the elementary school.

There are two group homes operated in the Township with capacity ranging from 4 to 8 residents.

There are few migrant workers involved in employment within the Township. However, there is migrant worker housing provided in the Township.

There are few refugees within the Township.

There are no identifiable concerns regarding language or culture barriers within the Township population.

Critical Infrastructure Profile

Electricity

The Township is serviced by Hydro One for electricity. Hydro One operates one primary transformer station in Concession 14. The station is connected to one of the two 230KV transmission lines that moves electricity in the east-west corridors through the Township. Hydro One operates a 115 KV transmission line parallel to the 230KV line in Concession 14. A second east-west 230KV transmission line is located in Concession 6. The local distribution lines are largely overhead located on poles providing electricity to the community.

Water

The Township of Enniskillen operates a water distribution system that provides potable water to the residents of the Township with limited distribution in abutting municipalities.

Water is purchased from the Town of Petrolia and is connected in 9 metered points.

The water distribution system **was not constructed to provide fire flow.**

A reservoir located in Concession 3 south of Oil City has water storage capacity of 1,360 cubic meters for emergency purposes.

Petroleum

Sun Oil operates a refined petroleum pipeline in Concession 14. The pipeline carries petroleum products from the Sarnia area through the Township to points east of Lambton County.

Enbridge Energy operates a variety of natural gas pipelines, natural gas storage pools and residential distribution lines in parts of the Township.

The Enbridge distribution lines are located in the hamlets of Oil City and Marthaville. Natural gas is supplied on Marthaville Road, Churchill Line east of Fairweather Road, Petrolia Line east of Petrolia and limited parts of Courtright Line and Rokeby Line.

Four natural gas pipelines are located in Concession 1,2 and 3. The high-pressure pipelines move natural gas through Enbridge's provincial pipeline network. Enbridge operates gas storage pools within the Township. Natural gas is injected in and removed from the subterrain storage pools. The pools are connected by small diameter high pressure pipelines largely located in municipal road allowances. A natural gas compressor station is located in Concession 2 operated by Enbridge. The network is controlled by Enbridge at its control facility located in the Township of Dawn-Euphemia.

Telecommunications

Land line phone service is provided by Bell Canada and Brooke Telecom. There are four cell phone towers located in the Township operated by Bell Mobility, AT&T and TELUS. None of the cell phone systems have back up electrical generation in their tower sites.

There has been more reliance placed on cell phones by Township residents. There is no clear public documentation on the number of residents who have abandoned land line telephone services.

The availability of fiber optic cable in the Township is expanding due to public investment. Cogeco, Brooke Telecom and East Link have entered into contracts to install fiber optic cable in large portions of the Township.

Cogeco provides cable tv and internet service in the hamlet of Oil City and parts of Marthaville.

There are three wireless internet suppliers in the Township-Teksavy, SLICC and Explornet. There are no backup generators to support the wireless internet systems. With a break in electrical services the wireless internet systems fail quickly.

There is a continuing transition from land line telephones to wireless phones. An extended loss of electrical services has the potential to reduce communications in affected areas for those reliant on both wireless telephones and wireless internet.

Medical Services

Hospital services are accessible in the neighbouring communities of Petrolia, Sarnia, Strathroy and London

Public airport services are accessible outside of the Township including Sarnia, London and Windsor.

Ambulance services are provided by the County of Lambton. Response times have been established to provide for medical events for residents of the Township. Hospital delays in processing patients impacts the ambulance response times. Fire services are responding to provide medical assistance in emergency situations based on a tiered response protocol.

Hazards Profile

Building Stock.

With the exception of the nursing home and senior's apartment building the remaining senior population is scattered throughout the township in single family dwellings.

The seasonal fluctuation in population at the Lorne Henderson Park raises some concern due to the narrow lane access for emergency equipment and the camping culture of open fires and alcohol consumption.

A camp ground emergency plan has been established to address a broad range of emergencies at the site.

The Township has two group homes which are located in single family dwellings. Annual inspections are undertaken of the sites to review safety plans for the residents. The inspections provide the site operators a clear understanding of the operator's responsibility during an emergency.

Due to the absence of adequate water flow in the rural areas structure fire events require the deployment of water tankers to supply water to fire events.

The County mutual aid agreement and Township auto aid agreements have provided a method to share the use of water tankers to supply of additional water. The addition of coordinated training by fire service to supply water by tankers is necessary.

Climate

The climate of the Township is impacted by its proximity to the Great Lakes. The lakes appear to moderate the frequency of tornados and major wind storms. However there have been 3 reported tornados in the Township in the last 10 of years. The storm in 2011 toppled 5-230KV transmission towers and 20 wooden hydro poles. The 2019 and 2023 tornados created limited damage to structures and vegetation within the Township.

The lack of ice cover during the winter on the Great Lakes increases the potential for more snow fall. Winter storms with drifting snow can create hazardous driving conditions and lead to interruptions in the electrical supply.

The risks associated with strong wind storms at any time during the year is a hazard for the community. Mobility during a winter event may be impacted by snow and ice conditions. Extreme storms may topple electrical distribution poles resulting in electrical service interruptions.

Flooding is generally restricted to the flood plains of the natural water courses within the municipality.

Township residents must accommodate the hazards of winter storms and be personally responsible to limit movements during storms as well as be prepared to

cope with the loss of electricity for a limited duration.

Due to the reduction in winter snow cover the number of privately owned snow mobiles has declined in the Township. As a result, the emergency services cannot depend upon a scalable number of private snow machine operators to provide assistance during snow emergencies.

Any time of the year rain events will have the potential to lead to flooding of creek crossings on Fairweather Road on Black Creek and Bear Creek. Road barrier gates have been installed on these roads to limit traffic during these irregular flooding periods. An enhanced trapping program has been undertaken to reduce flooding from beavers in the water courses. The Township engages in regular maintenance of the municipal drainage system which has the effect of reduce the severity of localized flooding within the municipality.

Electricity

Risks to the community can be reduced by ensuring that the local electrical utility company replaces aging poles in the distribution system.

The regular maintenance of vegetation by public utilities and private land owners will reduce the number electrical interruptions.

Natural Gas-Refined Petroleum

The commercial extraction of natural gas and oil from the area has a history dating to the 1860s. There is an extensive network of pipelines distributing the petroleum products. It is an established industry that is highly regulated.

Damage due to construction is the primary vector of concern.

The implementation of the One Call System has established a protocol to locate infrastructure thereby reducing the potential for damage to the pipelines that could release petroleum products into the environment.

The regulations have led to the development of safety procedures associated with construction in proximity to natural gas infrastructure. Natural gas employees are required to be present when construction takes place adjacent to higher pressure gas infrastructure.

The petroleum companies provide training to emergency service personnel to mitigate risk to first responders and the residents of the community.

This training largely directs that emergency personnel remove people from exposure to the products and contact the energy companies to repair the damaged infrastructure. Continuing public education of emergency personnel and the public generally will assist in providing guidance on how to address petroleum facility leaks.

The growth in the One Call System with the introduction of penalties may help to reduce the number of gas line breaks.

The risks to the public associated with high pressure gas line events could be significant. The location of the pipelines in lower populated areas reduces the potential impacts on residents. The municipal response to an event would be to

limit movements into the affected areas and rely on Enbridge to repair the affected infrastructure.

Community Services Profile

Community service agencies provide services that would support the community in the delivery of services or emergency response.

Community Services Profile

Agency	Types of Assistance	Issues
Sarnia Radio Club	communications	None
Canadian Red Cross	temporary shelter operations, food	Volunteer #s
Meals on Wheels	access to homebound population	
Royal Canadian Legion	food during disaster,	Volunteer #s
Local Churches	food during disaster	Volunteer #s

Public Safety and Fire Call Response Profile

Enniskillen Fire Responses 2018-2022

	Call Volumes	Injuries	Structure Loss \$	Deaths
Oil Springs Dept	68	0	\$905,000.00	0
Petrolia Dept	201	0	\$1,548,200.00	0
Total	269	0	\$2,453,200.00	0

The chart indicates that 75% of all dispatched calls for the fire services are for the Petrolia North Enniskillen Fire Department. The remaining 25% of the calls are for the Oil Springs South Enniskillen Fire Department.