









## **City of Pembroke**

Sector Competitiveness Study





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## Introduction

This document is divided into two key sections; a competitive benchmarking section, and a strategic recommendations and value propositions section. Key findings are presented from a series of competitive benchmarking exercises conducted for the City of Pembroke across six different industries and for up to six comparator communities. For each section of the benchmarking exercise, a summary of key competitive advantages and disadvantages is presented.

The six industries studied include:

- Manufacturing
- Biofuels and Wood by-products
- Cannabis Manufacturing
- Retail & Personal Services
- Lone Eagles (independent entrepreneurs)
- Defence & Security Industry (private sector)

The study is not intended to serve as a marketing device, but as a source from which to draw upon when strategizing future marketing, outreach, and means of improvement. Above all, it illustrates where leverage exists and where it may be lacking.

### Sector and Community Juxtaposition

The sectors of interest have been linked with key municipalities that serve as benchmark communities. In all cases Petawawa is included, but the remaining configuration varies across the sectors. The list of target sectors is juxtaposed against the various comparator communities in the figure below:

**Figure 1: List of Target Sectors and Comparator Communities** 

Sectors	1	2	3	4	5	6
Manufacturing	Petawawa	Renfrew	Arnprior	Ottawa	Deep River	(blank)
Biofuels and Wood by- products	Petawawa	Bancroft	North Bay	Pontiac (QC)	Renfrew (town)	(blank)
Cannabis Manufacturing	Petawawa	Greater Napanee	Smiths Falls	Kincardine	Mississippi Mills	(blank)
Retail	Petawawa	Arnprior	West Ottawa	Renfrew	Laurentian Valley	(blank)
Lone eagles	Petawawa	Carlton Place	Mississippi Mills	Perth	North Grenville	Arnprior
Defence Industry	Petawawa	Laurentian Valley	Deep River	Quinte West	Kingston	Ottawa

For Defence and Cannabis Manufacturing, some comparator communities are those that already have



identified strengths or operations in the sector.

### **Data Sources**

The consulting team undertook a comparison of Pembroke's investment factors against a number of communities, and this approach required data from a number of sources. Sources of the data are as follows:

- Development charges and tax information were taken from the Ministry of Municipal Affairs'
   Financial Information Return website (<a href="https://efis.fma.csc.gov.on.ca/fir/ViewFIR2016.htm#4779">https://efis.fma.csc.gov.on.ca/fir/ViewFIR2016.htm#4779</a>),
   and also from municipal websites, where data was missing from MMA's resource
- Water and sewer capacity, available employment lands, other land cost were taken municipal websites or obtained via direct interview with local administration
- Population, labour force, industry, and related demographic data are derived from Statistics Canada Census Profiles (2016)

Phone calls and direct contact was attempted for all missing data, but in some circumstances data were not able to be obtained for some communities.

### **Regional Push-Pull Factors**

A key operating assumption that is likely to impact some metrics used in the competitiveness study relates to the catchment area of which Pembroke is a part. Pembroke has had a legacy of being the dominant centre of commerce in the region. People have relied on Pembroke for its amenities and infrastructure, while in other nearby communities, amenities and infrastructure may have been lacking. An example is the extension of servicing beyond Pembroke's boundary to neighbouring Laurentian Valley, which has allowed some business development beyond Pembroke's border.

According to the most recent Census Profile, in 2016, Pembroke's population was 13,882, but as a census agglomeration, its population was 23,269; representing nearly an additional 10,000 people. This excludes, Petawawa, which represents itself as a census agglomeration. Therefore, in addition to Pembroke's census agglomeration, it is well-established that other areas such as Petawawa and Pontiac, Quebec, continue to rely on Pembroke for some commercial services and amenities. The regional draw is therefore understated to some extent by existing Statistics Canada data.

In sum, Pembroke's ability to draw interest for commercial and personal amenities helps to increase its value proposition because it also has a broader catchment for consumers and labour.

## Manufacturing

Manufacturing still remains a critical consideration for economic development in communities because of the expected multiplier effects such businesses tend to have on their broader communities through supply chains and consumer spending by employees.

Pembroke's manufacturing base is tied to its history as a community and remains a key reason for the community's salience. This section looks at competitiveness considerations relevant to investment



attraction in manufacturing. The section looks at Petawawa, Renfrew, Arnprior, Ottawa, and Deep River. It takes into considerations the broad considerations associated with the manufacturing sector in general.

**Figure 2: Key Manufacturing Comparator Indicators** 

Indicator	Petawawa	Renfrew	Arnprior	Ottawa	Deep River	Pembroke
Matan Canacity (aubic mataus)	DC: 5,876	DC: 5,081	DC: 5,364	DC: na	DC: 2,000	DC: 9,352.6
Water Capacity (cubic meters)	RC: 21,500	RC: 9,500	RC: 10,340	RC: na	RC: 8,000	RC: 16,733
Sewer Capacity	DF: 5,876	DF: 4,350.5	DF: 4,619	DF: 383,000	DF: 2,000	DF: 8,133.7
Server capacity	RC: 17,460	RC: 5,859	RC: na	RC: 545,000	RC: 2,700	RC: 14,340
Available Serviced land	44 acres (partially serviced)	200 acres	19 acres	1,020 ha	110 acres	126 acres
Total industrial property tax rates	3.395512%	4.993930%	4.854533%	2.776492%	5.145967%	3.7171324%
Land prices (serviced) (avg./acre)	\$10,000	\$8,100- \$10,000	\$83,333	\$120,000	\$22,500	\$10,000
Development charges	\$2.96	\$14.26	\$6.00	\$8.84	none	\$0.89
Annual water/sewer costs - industrial (volume m3 : \$)	Fixed Rate: \$1,047	Information pending	Fixed Rate: \$3,764	Fixed Rate (6"): \$10,344	Fixed Annual: \$1,289	1,365 m3 Rate: \$3,317
Electricity (based on 275,000 kWh per year)	Loss factor: 1.061 Total Bill: \$53,134.36	Loss factor: 1.081 Total Bill: \$47,517.35	Loss factor: 1.061 Total Bill: \$53,134.36	Loss factor: 1.034 Total Bill: \$48,364.09	data not available	Loss factor: 1.0457 Total Bill: \$46,150.28
LQ Manufacturing	0.14	1.47	1.22	0.32	0.17	0.41
Sector-Specific Website Page?	No	No	No	No	No	Yes
Online Business Directory	Yes	Yes	Yes	Yes	Yes	Yes
Online Property Database (industrial)	No	Yes	Yes	Yes	Yes	Yes

Note: DC= Daily Consumption; RC=Rated Capacity; DF=Daily Flow. LQ = location quotient, a unit of measure that identifies whether an industry is stronger in a specific geographic area than the same industry at a provincial level. A score of 1.25 or greater is considered a strong industry, a score between 0.75 and 1.24 is considered on-par with the Province, and a score of 0.75 is considered a weaker industry than the provincial average.

### Competitiveness Considerations for Manufacturing

### **Key Competitive Advantages**

With the exception of Ottawa, Pembroke's water and sewer capacities are highly competitive, positioning the community for potential water-intensive activities, such as food processing. While Petawawa has capacity to support significant increases in sewage treatment, only the main built-up area of the town has sewage, with large rural portions and its industrial park only having water supply. Pembroke has considerable headroom between its daily flow and rated capacities.



Moreover, Pembroke's sewer and water costs are competitive, and while they may not be as competitive as Petawawa's, Pembroke's access to both water and sewer servicing at industrial sites give it a distinct advantage.

- Since 2016, Pembroke has sought to reduce its industrial property tax rate by nearly half, arriving at 3.717%, which has aided in its competitiveness. In addition, Pembroke's tax rates are representative of the fact that it is large commercial centre with large infrastructure and a larger pool of local amenities.
- The land is competitively priced, and the City continues to retain a municipally owned supply for development (126 acres of commercial/industrial land). Notably, Arnprior's supply is only available through private landholders.
- Next to Deep River, which has a development charge of zero dollars, Pembroke remains highly competitive. Considering the lack of municipally owned lands in Arnprior and its comparably high development charge fees, Pembroke is positioned to convince people to go the extra half hour beyond Arnprior up the 17 and take advantage of the benefits available and serviced land.
- Regarding content navigation and investment information, Pembroke's website remains a cut above for marketing information specifically geared toward manufacturing.

### **Key Competitive Disadvantages**

Location quotient (LQ) scores, which measure local competitiveness in a specific sector vis-à-vis the rest of the province for the same sector, position Pembroke's manufacturing sector below par at 0.41 ((below par is less than 0.75). Renfrew is the only community with a statistically competitive LQ value for manufacturing at 1.47 (where a score above 1.25 is considered a strong industry). Overall, LQs are generally weak across most comparators, indicating that even a growth of a couple manufacturers would likely drive up Pembroke's LQs to parity levels.



## Biofuels and Wood By-Products

A biofuel is a fuel that is produced through contemporary biological processes. Wood by-products can be used a source of energy and are an additional means of creating further revenue generating opportunities for the forestry industry. Sawdust and other wood by-products created during the manufacturing process are collected as opposed to disposed of and can be used as a source of energy to go back toward the manufacturing process. Wood-based biofuels are a great alternative to other forms of energy generating processes and in recent years have seen a great increase and become competitive as a commercial alternative to other fuel forms.

With Pembroke-area already having an established forestry sector, enhancing the biofuel and wood by-product sector is a natural opportunity to focus efforts toward. This section looks at numerous indicators across Pembroke and five other locations, including one across the Ottawa River in Quebec. These comparators are also viewed as having historically strong forestry and wood product manufacturing. They include Petawawa, Bancroft, North Bay, Pontiac (Quebec), and Renfrew.

The analysis is divided into two parts, the first looking at benchmarking across all six communities, and the second looking at several additional indicators across all communities except Pontiac whose data was difficult to obtain and inconsistent.

The data will be presented below, followed by a summary of Key Competitive Advantages and Key Competitive Disadvantages.



Figure 3: Biofuels and Wood By-Products Comparator Indicators

Indicator	Petawawa	Bancroft	North Bay	Pontiac	Renfrew	Pembroke
Commercial property tax rate	2.566266%	2.553259%	3.542917%	na	3.586338%	2.798593%
Development charges (per Sq.ft.)	\$1.65	5000-15000 sq.ft \$2.91/sq.ft >15,000 \$5.81/sq.ft	None	na	\$3.15	\$0.89
Median household income (\$)	\$86,048	\$46,336	\$60,731	\$77,952	\$48,427	\$51,051
Population	17,187	3,881	51,553 (70,378)*	5,850	8,223	13,882 (23,269)*
Population Growth (%) 2006-2016	17.3%	1.1%	4.5% (-2.5)*	56.9%	4.8%	-0.3% (-3.9%)*
Net inflow (+) / outflow (-) of workforce	5,030	1,205	5,420	-1,975	1,695	2,165
Sector-Specific Website Page?	No	No	No	No	No	Yes
Online Business Directory	Yes	No	Yes	Yes	Yes	Yes
Online Property Database (commercial)	No	No	No	Yes	Yes	Yes

<sup>\*</sup>Amount includes Census Agglomeration total. Note: DC= Daily Consumption; RC=Rated Capacity; DF=Daily Flow. LQ = location quotient, a unit of measure that identifies whether an industry is stronger in a specific geographic area than the same industry at a provincial level. A score of 1.25 or greater is considered a strong industry, a score between 0.75 and 1.24 is considered onpar with the Province, and a score of 0.75 is considered a weaker industry than the provincial average. NA=not available. Note Pembroke's tax rate is based on 2018 figures, while other communities have been sourced from the Financial Information Return website.



Figure 4: Additional Biofuels and Wood By-Products Comparator Indicators

Indicator	Petawawa	Bancroft	North Bay	Renfrew	Pembroke
Water Capacity	DC:5,876	DC: 3,380	DC: 18,200	DC: 5,081	DC: 9,352.6
(m3/day)	RC: 21,500	na	na	RC: 9,500	RC: 16,733
Sewer Capacity	DF: 8,730	1,632 m3/day	54,480 m3 per day	DF: 4,350.5	DF: 8,133.7
Sewer capacity	RC: 17,460			RC: 5,859	RC: 14,340
Available Industrial Buildings	No buildings available	No listed Industrial buildings in Bancroft	Some – mainly small to medium-sized buildings with one large facility.	Limited buildings available	Several buildings available
Available Serviced Non- Residential land	44 acres	na	600* acres	200* acres	126 acres
Total industrial property tax rates	3.395512%	2.878449%	2.937562%	4.993930%	3.7171324%
Land prices (serviced) (avg./acre)	\$10,000	\$6,00-\$15,000	~\$10,000-\$15,000	\$8,100-\$10,000	\$10,000
Annual water/sewer costs - industrial (volume m3 : \$)	Fixed Rate: \$1,047	<1" meter \$10.54 1" meter \$16.86 1-1/2" meter \$25.28 2" meter33.71	Water: \$1.27/m3 Wastewater: 76.86% of the sum of total amount of meter size charge	30K: 71,420 100K: 237,404 500K: 1,185,295 1M: 2,368,995	1,365 m3 Rate: \$3,317
Electricity (based on 275,000 kWh per year)	Loss factor: 1.061 Total Bill: \$53,134.36	Loss factor: 1.061 Total Bill: \$53,134.36	Loss Factor: 1.047 Total Bill: \$46,808.77	Loss factor: 1.081 Total Bill: \$47,517.35	Loss factor: 1.0457 Total Bill: \$46,150.28

Note: DC= Daily Consumption; RC=Rated Capacity; DF=Daily Flow. LQ = location quotient, a unit of measure that identifies whether an industry is stronger in a specific geographic area than the same industry at a provincial level. \*Numbers are based on available website data. Despite initiating contact with Municipalities to gain clarity about the scope of the acrage (i.e. if it includes all developable land), no answer were provided.



## Competitiveness Considerations for Biofuels and Wood By-Products

### **Key Competitive Advantages**

- Well-established forestry sector in the region. In Renfrew County, the primary wood manufacturing footprint is over 10 times the provincial average indicating a strong specialization in this sector<sup>1</sup>.
- Pembroke has low development charges and taxes, and affordable municipally-owned land, thereby having an advantage in new development over other more-costly communities.
- There is an already established business network through Ottawa Valley Wood which allows new developments in the industry to be easily communicated and encouraged amongst the network. This network also facilitates local buying and operation decisions that can help in operational efficiency<sup>2</sup>.
- Relative proximity to major centres (e.g. Ottawa, Montreal) in comparison to other more remote forestry focused regions such as North Bay.
- Pembroke is ready for investment with already established serviced land, and a reserve of available buildings. Pembroke also has an Ontario Investment Ready Certified site.
- Favourable Canadian dollar for international investment.
- Direct access to Highway 17 and 41
- Regional Professional Business Centre means access to business services can be used
- Pembroke and Area Airport is co-funded by Pembroke and four other partners, and is located within 20 minutes from Pembroke.

### **Key Competitive Disadvantages**

The initial effort and/or money needed to adjust existing manufacturing processes to include biofuel initiatives means that it is not likely to be a locally-driven initiative, therefore requiring outside investment and more costly research and outreach.

<sup>&</sup>lt;sup>1</sup> Pembroke, "Key Sectors," http://www.pembroke.ca/economic-development/key-sectors/secondary-wood-product-manufacturing/

<sup>&</sup>lt;sup>2</sup> Ottawa Valley Wood, "About Ottawa Valley Wood," <a href="http://www.ottawavalleywood.com/">http://www.ottawavalleywood.com/</a>



## **Cannabis Manufacturing**

Medical Marijuana, and cannabis manufacturing more broadly, is an industry that has received a great amount of interest in recent years, and particularly within the past year with the future legalization of marijuana sales and use. It is estimated that there will be \$10 billion in demand from Canadian consumers for legal cannabis, with projected government revenue from taxes at \$5 billion. Given the strategic position of Pembroke, the city is uniquely situated to take advantage of this quickly growing market. The establishment of a medical marijuana growing facility has the potential to give resurgence to the population and supporting industries in Pembroke.

One can turn to Smiths Falls as a close comparator and case study to success and growth the community has experienced as a result of the medical marijuana industry.

For this analysis, Pembroke was compared to several area municipalities that are also poised to break into the market but has also considered Smiths Falls and Kincardine, which already have medical marijuana facilities.



**Figure 5: Cannabis Manufacturing Comparator Indicators** 

Indicator	Petawawa	Greater Napanee	Smiths Falls	Kincardine	Mississippi Mills	Pembroke
Average Rental Cost per Sq.Ft. (Industrial)	\$9.00	\$8.00	\$7.00	\$9.00	\$9.00	\$9.00
Commercial property tax rate	2.566266%	2.671859%	4.525113%	2.296678%	2.762928%	2.741768%
Development charges	\$1.65 / sq. ft.	\$1.98 / sq. ft	None	\$0.57/sq. ft (non- serviced) \$3.83 / sq. ft (serviced)	\$2.58/sq. ft	\$0.89 / sq. ft
Local median household income (\$)	\$86,048	\$64,213	\$47,104 \$86,363		\$84,173	\$51,051
Average cost of home	\$288,567	\$279,966	\$198,636	\$319,948	\$380,403	\$221,994
Population	17,187	15,892	8,780	11,389	13,163	13,882 (23,269)*
Population Growth (%) 2006-2016	17.3%	3.19%	0.03%	1.93%	12.2%	-0.3% (-3.9%)*
Net inflow (+) / outflow (-) of workforce*	5,030	1,130	1,773	4,945	-2,345	2,165
Sector-Specific Website Page?	No	No	No	No	No	Yes
Online Business Directory	Yes	Yes	Yes	Yes	Yes	Yes
Online Property Database (Industrial)	No	Yes	No	Yes	No	Yes

Note Pembroke's tax rate is based on 2018 figures, while other communities have been sourced from the Financial Information Return website. Items in parentheses represent regional data from the census agglomeration level.



Figure 6: Cannabis Manufacturing Comparator Indicators (continued)

Indicator	Petawawa	Greater Napanee	Smiths Falls	Kincardine	Mississippi Mills	Pembroke
Water Capacity (m3/day)	DC: 5,876	Water treatment plant: 10,450 cubic meter/day	Information not available	DC: 3,126	Information not available	DC: 9,352
	RC: 21,500	na	na	na	na	RC: 16,733
Sewer Capacity	DF: 8,730	Waste water treatment plant: Average	Information not available	Information not available	Information not available	DF: 8,133
	RC: 17,460	flow: 9,087 cubic meter/day				RC: 14,340
Available Industrial Buildings	None	Various properties available	Some listed buildings	Multiple buildings available	Some buildings available	Multiple buildings available
Available Serviced land	44 acres	Various land available	12 properties ~100acres	Multiple properties available	53 acres	126 acres
Total industrial property tax rates	3.395512%	3.447167%	5.364320%	3.170609%	3.759195%	3.7171324%
Land prices (serviced) (avg./acre)	\$10,000 (semi- serviced)	~\$40,000/acre	~\$60,00/acre	~\$60,000/acre	\$50,000/acre or less	\$10,000
Electricity (based on 275,000 kWh per year)	Loss factor: 1.061 Total Bill: \$53,134.36	Loss factor: 1.061 Total Bill: \$53,134.36	Loss factor: 1.061 Total Bill: \$53,134.36	Through Westario Power – not able to provide cost.	Loss factor: 1.061 Total Bill: \$53,134.36	Loss factor: 1.0457 Total Bill: \$46,150.28
Annual water/sewer costs - industrial (volume m3 : \$)	Fixed Rate: \$1,047	\$0.94 for water \$1.22 for sewer 33.3% surcharge for water and sewer combined	Base charge for water and sewer combined: \$69.37/month \$1.229 for water and \$1.252 for sewer/ m3	\$0.85/m3	\$11.53/ 1000 gallons + 3 installments per year of \$187.52 Sewage: \$2.54/ m3	1,365 m3 Rate: \$3,317

Note: DC= Daily Consumption; RC=Rated Capacity; DF=Daily Flow. LQ = location quotient, a unit of measure that identifies whether an industry is stronger in a specific geographic area than the same industry at a provincial level.



## Competitiveness Considerations for Cannabis Manufacturing

### **Competitive Advantages**

- The large amount of serviced land available combined with the low cost of industrial land, and low development charges makes Pembroke attractive over other comparator regions. In addition, Pembroke has an available inventory of developed space, some of which is open to partial property leasing.
- Low cost of living is favourable for employee attraction and retention.
- Access to affordable high-volume electricity and water, and there is plenty of headroom in capacity levels for high volume growth.
- Experienced workforce due to large forestry and agriculture sectors as transferrable to medical marijuana growing and manufacturing.
- Available buildings and direct access to highway 17 and 41.

### **Competitive Disadvantages**

 The distance from major city, such as Ottawa, Toronto or Montreal in comparison to other communities such as Smiths Falls, Mississippi Mills or locations along HWY 401 make for a challenge for location considerations.



## Retail and Personal Service Development

Pembroke's history has positioned the community as a regional hub for goods and services. The variety of industries in the region, its location on the junction of Highways 17 and 41, and its proximity to large area employers such as Garrison Petawawa have contributed to its growth in retail, personal service, and food service amenities, but there are competitiveness considerations that warrant investigation, as areas such as Petawawa continue to grow. Also, regional growth may yield opportunities for further development in Pembroke, which commercial services are already concentrated and known.

Retail and personal service development, in this case, pertains to Pembroke's ability to attract and retain businesses that are generally people-oriented in non-professional ways (i.e. not including lawyers, accountants, and such). A special emphasis is placed on the net-inflow and outflow of people, where if a greater number of people are coming into Pembroke or other communities than are leaving, there is less likelihood of economic leakage.

**Figure 7: Key Retail and Personal Service Comparator Indicators** 

Indicator	Petawawa	Laurentian Valley	Renfrew	Arnprior	Kanata- Carleton	Pembroke
Average Rental Cost per Sq.Ft. (commercial)	\$14.00	No properties found	No properties found	No properties found	\$20.75	\$13.50
Commercial property tax rate	2.566266%	2.587777%	3.586338%	3.459985%	3.027346%	2.798593%
Development charges	\$1.65	\$1.81	\$3.15	\$5.28	\$20.33	\$0.89
Local median household income (\$)	\$86,048	\$79,381	\$48,427	\$61,810	\$109,440	\$51,051
Population	17,187	9,387	8,223	8,795	110,960	13,882 (23,269)*
Population Growth (%) 2006- 2016	17.3%	1.3%	4.8%	22.9%	39.5%	-0.3% (3.9%)*
Net inflow (+) / outflow (-) of workforce*	5,030	-1,890	1,695	1,555	na	2,165
	Retail	Retail	Retail	Retail	Retail	Retail
LQ of Retail/Other Personal	0.73	1.06	1.58	1.52	1.05	1.28
Services	Other	Other	Other	Other	Other	Other
	0.59	1.31	1.10	1.31	1.08	1.17
Sector-Specific Website Page?	No	No	No	No	No	Yes
Online Business Directory	Yes	Yes	Yes	Yes	Yes	Yes
Online Property Database (commercial)	No	No	Yes	Yes	Yes	Yes
Community Improvement Plan?	No	No	Yes	Yes	Yes (Carling Ave.)	Yes

Note: Pembroke's tax rate is based on 2018 figures, while other communities have been sourced from the Financial Information Return website. Items in parentheses represent regional data from the census agglomeration level. Items in parentheses pertain to regional amounts at the census agglomeration level.



## Competitiveness Considerations for Retail and Personal Commerce

### **Key Competitive Advantages**

- Regional population of more than 40,000 (including Laurentian Valley and Petawawa), lends to a broad catchment area that even penetrates Eastern Quebec's Pontiac.
- Available rental costs in Pembroke are generally competitive and many comparators lack available properties.
- Pembroke's development charges for commercial property are lowest at \$0.89/sq.ft., and commercial taxes are competitive at 2.7986%.
- Pembroke's net inflow is a surplus of 2,165 of daily commuters, which is only second to Petawawa's Garrison. Moreover, Petawawa continues to be a source of consumers for many Pembroke businesses.
- Pembroke's Retail sector is strong at LQ 1.28, with its personal services sector near competitiveness.
- Pembroke has information available on its website and can develop fact sheets relevant to retail, while key competitors such as Petawawa do not have available property listings on its municipal site.
- Recent Ottawa-area developers have brought investment to Pembroke, indicating a growing area of strategic interest.
- The Community Improvement Plan has strong uptake, and the majority of investments made are notably higher than the minimum commitment requirements.
- Pembroke has active economic development programming targeting retail, including specific business retention and expansion outreach and services.
- While median household income is low, when considering the broader region, it grows to over \$70,000 (including Laurentian Valley and Petawawa).

### **Key Competitive Disadvantages**

Pembroke's population increased between 2006 and 2011, but declined by roughly the same amount (about 3%) between 2011 and 2016. The Pembroke Census Agglomeration, which includes Laurentian Valley, has also had a slight decline between 2006 and 2016 of 3.9%. Nonetheless, if Petawawa is considered within the catchment area, the overall population is over 40,000 people and has grown by approximately 14%. As Petawawa continues to grow, it may become a place of interest for prospective investors



## Lone Eagles (Independent Entrepreneurs)

Freelance professionals, also known as 'Lone Eagles', 'solopreneurs', or 'independent entrepreneurs' are knowledge workers with highly transportable skills, such as writers, analysts, artists, accountants, trades people, sales professionals, manufacturers' representatives and other advisors. Most live in large cities but many are moving to small towns and rural areas for better quality of life. An increasing number of rural areas that are near metropolitan cities are considering this approach. For example, Prince Edward County is centering much of their economic development campaign around this class of individual as well as agri-food producers and tourism operators (see www.buildanewlife.ca).

Lone Eagles' infrastructure requirements are few, which means that business development and attraction for this sector requires limited investment by the City. However, the following are essential: efficient telecommunications (mobile phone coverage, broadband access), reliable courier service and reasonable access to an airport with commuter flights.

By definition, a Lone Eagle is someone who:

- Generates 75% or more of their income from outside the local area
- Mobile and can live where they want
- What they are fleeing:
  - Urban environment
  - Rapid development
  - Environmental degradation.
- What they want to find:
  - Clean air and quiet spaces to enjoy flora and fauna
  - High quality telecommunications services
  - A place closer to relatives (sometimes means returning "home")
  - Outdoor recreational activities
  - A safer place to live
  - Employment for their spouse (if applicable).

Many fledgling entrepreneurs and Lone Eagle professionals would prefer to begin business ventures in their homes where they have fewer expenses and less risk. In response, many communities allow restricted home occupations as permitted uses in many residential zoning districts. When Lone Eagles are successful, they expand their operations by leasing office space and hire staff or contract out work to other Lone Eagles (e.g., sub-consulting, bookkeeping, etc.).

Although the quality of these considerations is based on an individual's tastes, it appears that Pembroke can provide many of these essential requirements to someone living in another part of the Ontario, particularly the Greater Toronto Area.



The benefits to the community of a strong Lone Eagle presence are many.

- 1. Their dependence on local infrastructure is minimal
- 2. The business operators may become the key skilled labour that is required for larger investors to feel confident in the region
- 3. They provide services and supplies to larger businesses
- 4. They provide a needed level of diversification which keeps it stable in tough economic times
- 5. They are the same businesses that will grow quietly or quickly into 5, 10 or 50-person operations
- 6. Spouses and/or children of these small business operators offer a ready supply of local employees
- 7. People are more likely to shop where they work which increases economic spin-off
- 8. People are much more likely to feel a sense of community if they live and work in the same place. This contributes greatly to the social side of the community by way of increased volunteerism, participation in local debates and financial donations to local non-profits/charities
- 9. The types of recreational amenities, community improvements and physical environment they pursue are generally consistent with the desires of tourists or visitors from neighbouring communities. This means that an investment in attracting Lone Eagles will also attract visitors/tourists
- 10. Business leaders have a way of attracting other business leaders. These Lone Eagles will be the region's ambassadors for new investment

For Pembroke, comparators were chosen based on their potential to grow similar industry segments because of their respective quality of life and quality of place factors which serve as key lures. Some key variables studied that stand out from other sectors studied include the existence of a Small Business Centre, where individual office spaces can be rented for small businesses and resources can be shared, internet speed, and residential electricity costs, as opposed to industrial or commercial rates.

The comparator communities' respective utility providers are summarized as follows:

- Pembroke: Ottawa River Power Corporation
- Petawawa: Hydro One High High Density
- Mississippi Mills: Ottawa River Power Corporation
- Carleton Place: Hydro One- High Density
- Perth: Hydro One High Density
- North Grenville: Hydro One Medium Density
- Arnprior: Hydro One High Density



Figure 8: Key Lone Eagle/Solopreneur Comparator Indicators

Indicator	Petawawa	Carleton Place	Mississippi Mills	Perth	North Grenville	Arnprior	Pembroke
Residential tax rate	0.851277%	1.208800%	1.053824%	0.293864%	1.113397%	1.343766%	1.41341%
Local median household income (\$)	\$86,048	\$71,481	\$84,173	\$52,429	\$89,869	\$61,810	\$51,051
Average Cost of Home	\$288,567	\$303,874	\$380,403	\$277,722	\$369,847	\$265,798	\$221,994
Population	17,187	10,644	13,163	5,930	16,451	8,795	13,882
Population Growth (%) 2006- 2016	17.3%	12.60%	12.20%	0.39%	15.87%	22.87%	-0.3%
Online Business Directory	Yes	No	Yes	Yes	No	Yes	Yes
Online Property Database (residentia	No	No	No	No	Yes	Yes	Yes
Small Business Centre	No	No	No	No	Yes	No	Yes
Residential Hydro Rate	1000kWh: \$170.57 3000kWh: \$430.16 5000kWh: \$689.75	1000kWH: \$162.47 3000 kWH: \$431.67 5000 kWh: \$700.86	1000kWh: \$149.85 3000kWh: \$408.89 5000kWh: \$667.92	1000kWH: \$162.47 3000 kWH: \$431.67 5000 kWh: \$700.86	1000 kWH: \$166.96 3000kWH: \$420.43 5000 kWH: \$641.83	1000kWH: \$162.47 3000 kWH: \$431.67 5000 kWh: \$700.86	1000kWh: \$149.85 3000kWh: \$408.89 5000kWh: \$667.92
Fibre- Internet Upload / download Speed	10mbps /: 50mbps	19mbps / 50mbps	3.2 mbps / 23mbps	14.1mbps / 50mbps	1mbps / 19mbps	18.84mbps / 27mbps	10gbps / 10gbps

Note: mbps=megabits per second; gbps = gigabits per second.



## Competitiveness Considerations for Lone Eagles

### **Competitive Advantages**

- Pembroke has a low cost of living compared to major centres, largely due to its competitive home costs which are the lowest in the region, as well as highly competitive hydro rates for residential and small business uses.
- Pembroke has the necessary infrastructure to meet the needs of home based and small-scale businesses that rely on fast internet connections with access to Fibre internet with maximum upload speeds of 10 gbps and maximum download speeds of 10 gbps.. In fact, Pembroke has the fasted internet among all comparators.
- The presence of a Small Business Centre (Pembroke Business Centre) in Pembroke, while numerous other communities are lacking in small office or co-location spaces.
- Pembroke has a close proximity to Ottawa (145km), and access to a major international airport less than an two hours away.

### **Competitive Disadvantages**

- The residential tax rate is slightly higher than comparators, but the difference may represent added value to potential residents in search of the quality amenities and infrastructure that are supported by taxes, which are less developed or lacking in comparators. Moreover, the difference is most often less than a 20<sup>th</sup> of a percent (0.2%).
- Population growth has stalled and has experienced slight negative growth. Other comparator regions have experienced positive population growth.
- Some communities have made a specific attempt to target this demographic and have already established some momentum, such as Mississippi Mills, Carleton Place, North Grenville.



## **Defence & Security**

With a Canadian Defence and Security industry that produces approximately \$10 billion in annual GDP contributions through direct, supply chain, and consumer spending, and the proximity of Garrison Petawawa less than 30 kilometers away, Pembroke may be poised to encourage small business development in defence related businesses.

The sector is characterized by numerous components associated with manufacturing and service provision, as well as knowledge-intensive applications across the following considerations:

- Aircraft fabrication, structures, components & maintenance, repair & overhaul
- Combat vehicles and related maintenance, repair & overhaul, and other defence
- Naval ship fabrication, structures & components & maintenance, repair & overhaul
- Command, control, communications, computers, intelligence, surveillance & reconnaissance (C4ISR), avionics, simulation systems, and other electronics (air, space, land & naval)
- Firearms, ammunition, missiles, rockets, and other munitions and weapons
- Troop support
- Live personnel and combat training services

Since most businesses are likely to be self-starter, the benchmarking considerations below are tailored toward small home-based or office-located businesses, which can serve as the basis of forming a knowledge cluster. These entrepreneurs are likely to emerge to fill supply-chain or knowledge gaps associated with any number of military or security needs.

The following considerations are relevant to the competitiveness benchmarking exercise:

- A number of Defence-Related Employees: Having a large pool of potential entrepreneurs that are currently in the Military is important because it represents the potential for local business growth based on spin-off enterprises.
- Distance to Key Military Locations: Proximity to Ottawa's National Defence Head Quarters (NDHQ)
  and potentially Kingston's Royal Military College (RMC), and Garrison Petawawa may be important
  factors affecting the decision of where to locate the business.
- Fibre Internet: Modern businesses rely on high-quality internet service with strong upload and download potential based on maximum available speeds.
- Small Business Centre A small business centre is a single location that specializes in providing individual office spaces to small businesses and shared additional services, such as reception, washrooms, meeting rooms, and potentially other services (e.g., printing, kitchenette, hot-desks, etc.).
- Office Rental Costs: As small businesses look to scale-up they may require larger office space.
   Competitive pricing for office may influence expansion decisions.



- Average Cost of Dwelling: Since many independent entrepreneurs start their businesses in their own homes, competitiveness in housing costs may be a consideration for expanding the pool of potential future entrepreneurs. Average Dwelling Cost has been identified for each community based on 2016 Census data.
- Residential Property Tax Rate: Related to dwelling cost competitiveness, this is the tax structure in the community and its overall competitiveness. Tax rates have been obtained from the Ministry of Municipal Affairs' annual reporting program, in which each municipality in Ontario participates. Numbers presented are from 2016 tax year for single and multi-residential structures.

Key comparators include Petawawa, Deep River, Kingston, Ottawa, and Quinte West.



**Figure 9: Key Defence Comparator Indicators** 

Indicator	Petawawa	Deep River	Kingston	Ottawa	Quinte West	Pembroke
Number of Defence-related Employees (NAICS)	4,270	310	3,385	13,480	2,840	595
	Single: 0.851277%	Single: 1.459297%	Single: 1.165617%	Single: 0.667442%	Singe: 1.20176%	Single: 1.413431%
Residential property tax rate	Multi:	Multi:	Multi:	Multi:	Multi:	Multi:
	1.477147%	2.658894%	2.303459%	0.870986%	2.347309%	1.554774%
	Petawawa	Petawawa	Petawawa	Petawawa	Petawawa	Petawawa
	0	30	253	163	245	16
Distance to Key Military	RMC Kingston	RMC Kingston	RMC Kingston	RMC Kingston	RMC Kingston	RMC Kingston
Locations	261	294	0	193	109	250
	NDHQ Ottawa	NDHQ Ottawa NDHQ Ottawa NDHQ Ottawa NDHQ Ottawa NDHQ		NDHQ Ottawa	NDHQ Ottawa	
	165	194	176	0	239	149
Military Base or Armory in Community	Yes	No	Yes	es Yes Yes		Yes
Local College with Police or Security Technical Training	No	No	Yes Yes		Yes	Yes
Fiber Internet (max upload/ max download)	10mbps / 50mbps	Not available	50mbps / 150mbps	50mbps / 150mbps	0.93 / 10mbps	10gbps / 10gbps
Small Business Centre	No	No	Yes	Yes	Yes	Yes
Office Rental Costs (sq.ft.)	\$14.00	\$12.00	\$16.00	\$10.50	\$12.00	\$12.33
Average value of dwelling (\$)	288,567	235,925	357,365	444,589	253,672	221,994
I O of note: I /nonconcl.com icos	Retail: 0.73	Retail: 0.75	Retail: 1.04	Retail: 0.93	Retail: 0.98	Retail: 1.28
LQ of retail/personal services (2016)	Other services: 0.59	Other services: 0.48	Other services: 0.92	Other services: 0.98	Other services: 0.92	Other services: 1.17
Online Property Database (residential)	MLS	MLS	MLS	MLS	MLS	MLS

Note: LQ = location quotient, a unit of measure that identifies whether an industry is stronger in a specific geographic area than the same industry at a provincial level. A score of 1.25 or greater is considered a strong industry, a score between 0.75 and 1.24 is considered on-par with the Province, and a score of 0.75 is considered a weaker industry than the provincial distribution.



## Competitiveness Considerations for Defence Businesses

### **Competitive Advantages**

- Taking the collective distance to all key military locations, Pembroke emerges strongest next to
  Ottawa, at 415KM total, indicating it is ideally situated for businesses that would need to deal with
  all three key locations, such as special consultants or service providers.
- Commercial businesses have access to the fasted internet upload/download speeds at 10 gigabits per second; which is significantly greater than comparators.
- Pembroke has a small business centre which is a key asset to promoting the growth of small businesses and can be important for future entrepreneurs in the sector as they transition from home-based businesses to larger operations. For businesses looking for actual office space, the average square footage rate for Pembroke is also lower than Petawawa at \$12.33/sq.ft., and there is a supply available for those interested.
- While Petawawa has a military base, Pembroke has a reserve unit, which allows for an additional source of potential future entrepreneurs that may bridge military experience or expertise with other knowledge sets applicable to a viable home-based or small scale business.
- For retail amenities, Pembroke has high LQ ratings in retail options (LQ 1.28), with other services nearing a position of competitive strength (LQ 1.17). These indicators are strong without suggesting the market is saturated, indicating there is opportunity to continue growth pursuits.
- Low dwelling costs and moderate residential tax rates are attractive to potential new residents and entrepreneurs.
- Pembroke's Algonquin College Campus has a Police Foundations course, which could complement the defence industry from a security perspective.

### **Competitive Disadvantages**

Pembroke has a moderate amount of residents that work in the military (595 people) compared to other communities, which may affect the potential pool of future entrepreneurs already living in Pembroke. . It also tends to be a centre for retired military in the region, and some of these people may ultimately start businesses in Pembroke as well.



# Strategic Recommendations & Value Propositions

This section is divided into two key components, one which presents a series of strategic recommendations as they relate to the competitiveness of the sectors in question and next steps to advancing investment readiness, marketing, and prospect development; and a second section which outlines Pembroke's investment value proposition.

### **Strategic Recommendations**

Though this competitiveness study reviewed six sectors or sub-sectors, in actuality they can be grouped into three categories; manufacturing-related (biofuels and bi-products, cannabis, and general manufacturing), creative economy (solo-entrepreneurs and defense & security-related businesses), and retail/personal services. The audiences vary depending on the group, with manufacturers likely being all external investors, creative economy likely being existing residents and possible new-resident attraction, and retail and personal services being a mix of external investment attraction and local cultivation. Marketing materials such as fact sheets, brochures, and sector-specific web-pages should be developed with the specific audiences in mind, and the service response and engagement approaches from Pembroke's economic development team also need to reflect these nuances.

From a strategic perspective, a broad manufacturing-related value proposition should always precede the value proposition for a more specific subset, so that they can be combined as needed to ensure the appropriate message is conveyed. Pembroke wants to convey confidence in the development potential of the sector more broadly, while also conveying the specificity of the sub-sector in question. A broader creative economy value proposition should also precede any detailed value proposition related to solo entrepreneurs or defence-related entrepreneurs.

For manufacturing the following recommendations are presented:

• Grow where Pembroke is Already Positioned for Growth: From a statistical perspective, even one or two small new manufacturers would improve Pembroke's competitiveness in the sector, if measured by location quotient scores. Regionally, there are no strong communities aside from Arnprior. Even a couple of new businesses will therefore have a marked improvement in competitiveness and stronger chance of filling supply-chain gaps. Thus, Pembroke should focus on opportunities to grow manufacturing from a broad perspective. Things like water cost, availability, and capacity, and electricity costs suggest that in addition to biofuels and cannabis, other agrifood or agriculture-based manufacturing may also be compatible. Beyond wood by-products going into renewables, there may be other opportunities for industrial symbiosis; which is a process that sees waste outputs from one industry become inputs for another industry. There may be opportunities to attract a business that can use outputs from existing businesses in Pembroke and the region as an input to production<sup>3</sup>. These examples show how leveraging existing strengths can have an impact on the overall sector.

<sup>&</sup>lt;sup>3</sup> Industrial Symbiosis is the process of using waste output from one industry or business as an input to another industry or business. Examples include using textile waste to develop new textiles, agriculture by-products to produce new goods, plastic materials for new injection molding products, and many more.



- Scatter Shot Versus Single Shot Approach: Given Pembroke's desire to grow a broader manufacturing base, and also target specific sub-industries, different approaches are required for investment attraction activities. For manufacturing more broadly, the approach should be to find opportunities to promote investment wherever possible, including through researching existing manufacturers in the region and identifying supply-chain gaps, attending trade shows, or other promotional activities. This approach is called scatter shot because it relies on getting the message to as many prospects as possible; thereby generating more leads, and ideally more conversions. For cannabis or biofuels, the approach will need to be more targeted and specific. Winning only one firm in each would be sufficient to have met the goal, while for manufacturing, more generally, the objective is to continue to grow multiple firms and develop clusters. Therefore, outreach to manufacturers already active in cannabis or biofuels is likely to be the best approach by developing a long-list of prospects and understanding them all very thoroughly so that outreach can be customized to each prospect. As opposed to a scatter shot approach, this approach is considered a single shot approach because it is specifically focussed on target firms from the onset.
- Find out more about what did not work: For sectors such as cannabis and biofuels, conduct internal research to understand how communities that tried to attract or develop such businesses failed. For biofuels and wood by-products, the research can extend to communities outside of Ontario, whereas for cannabis, the communities should all be from Ontario because of the bureaucratic and policy environment they are a part of.
- Identify Existing Bioethanol or Wood By-Product Manufacturers: This sector is best addressed by identifying successful companies that have already established and operated multiple facilities, and who already have the knowledge capital necessary to plan and implement a new project. Ensure that messaging is clear in distinguishing between bioethanol or biofuels, and wood bi-product manufacturing, so that potential investors are confident in Pembroke's knowledge of the broader and more nuanced aspects of the sector. Indeed, even the value proposition should be divided into two separate messages.
- Website and Webpages: Ideally, the Economic Development office should have its own dedicated website that is arm's length from the City, and no source of information should be more than three clicks away from the first landing page. This offers the opportunity to develop a unique and targeted URL such as InvestPembroke. In any case, even if developing a unique website is out of the question for the time being, ensuring that manufacturing continues to have a dedicated webpage, with subpages or sub-sections on the same page reserved specifically for cannabis and biofuels and wood byproducts is important. If Pembroke is employing a targeted approach for specific prospects in either of these two sub-sectors, having sections dedicated to them on the website conveys an air of legitimacy and indicates that the community stands behind development in the industry in question; particularly for cannabis manufacturing.
- Fact Sheets: Using data from this competitiveness study, as well as, additional data such as leading businesses in the community, key municipal resources and incentive programs, or additional demographic details as needed, Pembroke should develop specific fact sheets for each target sector. The fact sheets for biofuels and cannabis should include the broader manufacturing information, as well as any customized sector-specific data from this report or from other sources.
- Monitor and Update Building and Land Availability: In addition to municipally owned land, Pembroke should look to actively monitor and make available data about available industrial buildings, land and property. Ensure the database is linked to the City's GIS platform or on Google Maps, so that Pembroke's listings will come up exclusively, and so all non-realtor listings can be



promoted as well. The database should be reviewed regularly to remain current, and partnerships need to be developed with local land owners and realtors to ensure information is up to date.

For the **creative economy** the following recommendations are presented:

- Identifying the Boarder Creative Economy: Pembroke should identify all the existing businesses that form the creative economy. Not only will this give a stronger awareness of the existing business base, but can also identify where certain clusters or gaps exist that can be occupied by a new business. It may even be possible to initiate a creative economy working group, to help bring elements of the economy together, promote cross-pollination, and idea sharing for new business ventures. A creative economy value proposition should be developed by the City.
- Develop a Creative Economy Webpage: Initiate a creative economy webpage that promotes the creative economy more broadly, as well as home-based or small scale business growth opportunities, provides useful resources (internal and external), and makes the pitch for people starting home based entrepreneurship businesses. Provide examples of local success stories and include data about why Pembroke is the place to start a business. The page should have subsections devoted to solo-entrepreneurs and security related home business. An important aspect is that it is able to speak to two different audiences, existing residents that may become part of the creative economy and future residents Pembroke is trying to attract that have characteristics that support the creative economy.
- Inward Focus: Though the long-term objective is to attract more residents to the area that also bring or start their own businesses, in the short-term, building momentum in the sector has to come from the existing community. Residents need to be able to visualize themselves as future entrepreneurs. It is Pembroke's role to get them thinking about it and to follow through by having the support resources in place for people that step-forward with ideas. Remember that the target audience is people that would become part of the "creative economy". A home daycare is not an example of creative economy, while home-based architect, engineer, or technical consultant is.

#### **Retail and Personal Services:**

- Inventory Vacant and Underdeveloped Lands: Identify all prospective locations for future commercial development and also identify any under-developed properties that could be redeveloped. Take into consideration the ability to develop mixed-use properties, which would also help increase the diversity of housing options. Look into developing investment prospectuses for the most under-developed lands in order to initiate interest in re-development.
- Fact Sheet: Develop a sector-specific fact sheet that could be targeted to external investors or large chains, but ensure it remains accessible to local prospects that may take interest in franchise opportunities. Ensure the fact sheet is readily available, and that an excel version of data is readily available to pull customized data requests for prospects.
- Retail Market Gap Analysis: A growing tool for investment attraction in retail and personal services is the use of a retail market gap analysis, which takes into account existing businesses, their footprints, and the consumer base in the broader commercial catchment area, and compares Pembroke to nearby competitors to identify local and regional gaps in specific sub-sectors of the economy. If Pembroke is interested in narrowing down the field of possible targets for large scale



- investment, this tool may help. The tool would also help indicate what kinds of businesses are already over-supplied for the region.
- Continue to Promote Community Improvement Plan (CIP): Feedback has indicated the CIP has been successful in improving the aesthetic of commercial properties. Pembroke should continue to promote the CIP and revisit it regularly to ensure it remains relevant. Considering best practices in other CIPs may ultimately help it to continue to evolve. Consultation with previous recipients may also help to fine-tune the tool.

### **Value Propositions**

The following series of value propositions are based on considerations of the above recommendations, in addition to the preceding competitiveness benchmarking results. They are summarized in table format on the next page.



Figure 10: Value Propositions for Pembroke's Target Sectors

Sector	Value Proposition
Manufacturing	Pembroke is positioned perfectly for all manufacturing opportunities thanks to its large availability of shovel-ready and affordable property, its capacity to support cost effective high volume water and electricity needs at competitive rates, and access to a large skilled, trainable labour force suitable to any manufacturing needs.
Biofuels Manufacturing	Pembroke has had a long- standing history of innovation and progress in forestry and wood product manufacturing that continues to evolve for prospects such as bioethanol production. Our labour force is extensive and experienced, our operation costs are competitive, and we have a large supply of affordable, serviced land.
Wood By-Products Manufacturing	Pembroke's connection to forestry and wood product manufacturing runs deep in the community, and continues to represent an area of opportunity thanks to our proximity to vital raw materials and wood by-product sources as well as, access to highway infrastructure, and proximity to major markets in Ottawa, Toronto, and Montreal.
Cannabis Manufacturing	Low cost hydro-electricity, low cost water infrastructure, and low-cost shovel-ready land and existing building options put Pembroke on the map for your large-scale cannabis production facility, all within a policy friendly, labour-rich, and accessible location in close proximity to all major markets and supply corridors.
Retail and Personal Commerce	With a stable population and booming growth in the region, Pembroke is your best option for locating your next business. We are in an area that has a low cost of living, strong disposable income, and is undersupplied in various retail, food and personal service sectors. Come make money in Pembroke.
Lone Eagles and Independent Entrepreneurs	Lone eagles and independent entrepreneurs are characterized as people who operate a home or small business whose clientele are mainly from other places outside the community they live in, including consultants, engineers, architects, graphic designers, computer programmers, media technologists, translators and more.  You can do it all from beautiful Pembroke thanks to our unparalleled quality of
	life, competitive property costs, cost of living, critical infrastructure and health care, education resources, and proximity to Ottawa. Experience a work-life balance set according to your terms in Pembroke.
Defence & Security Entrepreneurs	Proximity to National Defence Head Quarters in Ottawa, Royal Military College in Kingston, Garrison Petawawa, and several other military operations in Eastern Ontario means your next career move after the Forces is as an expert entrepreneur, and Pembroke is equipped to see your business thrive with competitive business support services and location, an affordable and charming quality of life, and all the amenities and infrastructure you need for your small business.



## Appendix – Hydro Rate Benchmarking

The following excerpt represents the results of a benchmarking exercise that studied hydro rates for Industrial properties. Results are provided based on a 275,000 KwH per year draw. The summary table on the following page displays the results for Ottawa River Power Corporation in comparison to four other utility providers, to which different comparator communities are associated in the report.



Figure 11: Comparison of Rate Competitiveness across Various Hydro Electricity Providers, based on 275,000 KwH per Year.

OTTAWA R	IVER POWER CO	ORPORATION	N	Hydro One	Networks	Rer	nfrew	No	rth Bay	Hydro	Ottawa
				loss factor		loss factor		loss facto	r	loss factor	
without losses	275000	kwh	loss factor	1.061		1.081		1.047		1.034	
with losses	287567.5	kwh	1.0457	kwh	291,775.000	kwh	297,275.000	kwh	###############	kwh	284,212.500
	1000	KW									
Service Charge	\$		84.18		93.97		189.27		304.05		200.00
Distribution											
Volumetric	KW	3.4865	3,486.50	9.1837	9,183.70	2.8636	2,863.60	2.5383	2,538.30	4.3245	4,324.50
Low Voltage Service											
Rate	KW	0.2787	278.70			0.7587	758.70	0.0255	25.50	0.02632	26.32
Network											
Transmission	KW	2.1053	2,105.30	2.0123	2,012.30	2.2653	2,265.30	2.5418	2,541.80	2.8016	2,801.60
Line & Connection	KW	1.5245	1,524.50	1.3239	1,323.90	1.2014	1,201.40	2.0319	2,031.90	1.8174	1,817.40
Wholesale Market	kwh	0.0039	1,121.51	0.0039	1,137.92	0.0039	1,159.37	0.0039	1,123.01	0.0039	1,108.43
SSS			0.25		0.25		0.25		0.25		0.25
Electricity	kwh	0.0207	5,940.28	0.0207	6,027.20	0.0207	6,140.81	0.0207	5,948.23	0.0207	5,870.98
Provincial Benefit	kwh	0.0868	24,952.23	0.0868	25,317.32	0.0868	25,794.55	0.0868	24,985.64	0.0868	24,661.12
Debt Retirement											
Charge	kwh	0.0049	1,347.50	0.007	1,925.00	0.0061	1,677.50	0.007	1,925.00	0.007	1,989.49
Sub-Total			40,840.96		47,021.56		42,050.75		41,423.69		42,800.08
HST			5,309.32	HST	6,112.80	HST	5,466.60	HST	5,385.08	HST	5,564.01
Total Bill			46,150.28		53,134.36		47,517.35		46,808.77		48,364.09

Source: Ottawa River Power Corp., 2018.

