



GRAND ERIE DISTRICT SCHOOL BOARD

TO: JoAnna Roberto, Director of Education & Secretary
FROM: Rafal Wyszynski, Superintendent of Business & Treasurer
RE: **Energy Conservation and Demand Management Plan**
DATE: June 28, 2021

<p>Recommended Action: Moved by _____ Seconded by _____ THAT the Grand Erie District School Board receive the Energy Conservation and Demand Management Plan as information.</p>

Background

Every year, school boards are required to report energy performance metrics annually no later than July 1 in the following year to the Ministry of Education's Utility Consumption Database. This aligns with a regulation which was introduced under the Electricity Act, 1998 titled O. Reg. 507/18: Broader Public Sector: Reporting and Conservation and Demand Management Plans.

Under Ontario Regulation 507/18, all public agencies are required to report annually on energy use and greenhouse gas (GHG) emissions. The agencies are also required to prepare and make public updated five-year energy conservation and demand management plans.

An energy conservation and demand management plan is composed of the following two parts:

1. A summary of Grand Erie District School Board's annual energy consumption and greenhouse gas emissions for its operations.
2. A description of previous, current and proposed measures for conserving and otherwise reducing the amount of energy consumed by Grand Erie's operations and for managing its demand for energy, including a forecast of the expected results of current and proposed measures.

Next Steps

The attached report be submitted to the Ministry's portal using specified reporting templates. It will also be posted on the Board's website and hard copies will be made available, only upon request, at Board's Education Centre at 349 Erie Ave in Brantford, Ontario.

Grand Erie Multi-Year Plan

This report supports the Environment indicator of Success for Every Student and the following statement: we will ensure that students and staff have a safe and welcoming environment in which to learn and work.

Respectfully submitted,

Rafal Wyszynski
Superintendent of Business & Treasurer

**Grand Erie District School Board
Annual Energy Consumption and Greenhouse Gas
Emission Reporting:
O. Reg 507/18 Reporting 2019-20**



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Background:

In late 2018, Ontario Regulation 507/18: Broader Public Sector: Energy Reporting and Conservation and Demand Management Plans was introduced replacing Ontario Regulation 397/11. O. Reg 507/18 requires public agencies such as municipalities, school boards, universities, colleges and hospitals to report annually on their energy consumption and greenhouse gas (GHG) emissions. O. Reg. 507/18 outlines the reporting requirements to be completed by July 1st annually and must report on the previous fiscal year.

Each school board is required to report the total consumption of all energy types for all facilities. The use of electricity, natural gas and all other energy sources for each building must be identified within the report. All data must be uploaded onto the Ministry of Energy's reporting module. From the reporting module, a report is generated using the Ministry of Energy's reporting template. **Please refer to Appendix A: Energy Consumption and Greenhouse Gas Emissions Reporting - for FY2020.** This is referred to as Grand Erie's 2019-20 Consumption report in the remainder of this report.

The annual report must include the following information:

Name of site and building type (i.e., school, administration, etc.).

- Full Address
- Gross floor area
- Hours of operation per week
- Whether or not the school has a pool
- Number of portables on site
- Electricity (kWh) consumption for fiscal year
- Natural gas (m³) consumption for fiscal year, if applicable
- Other energy sources consumption (i.e., propane) for fiscal year, if applicable
- Total greenhouse gas emissions (kg) for each site
- Total ekWh/sq ft (equivalent kilowatt hours per square feet) for each site.

Grand Erie District School Board's 2019-20 Energy Report was successfully completed, uploaded and available as of June 1, 2021 on the Ministry of Energy's BPS Portal. For the purpose of the report, Grand Erie reports on Branlyn and Notre Dame while the BHNCDSB reports on St. Basils and Walter Gretzky.

As per O. Reg. 507/18, Boards are required to submit their completed consumption report annually to the Ministry of Energy, post both reports on both the internet and intranet sites and provide a hard copy at their office to any interested member of the public.

Report Data and Variables:

The report provides readers with an insight and overview into the energy consumption and performance of sites within Grand Erie District School Board.

The most informative figures within the report are the Energy Intensity figures located in the last column. Energy Use Intensity (EUI), measured in equivalent kilowatt hours per square feet (ekWh/sqft), is the base unit used by energy managers for comparison purposes. This metric is developed by first establishing natural gas consumption which is reported as cubic metres (m³) or gigajoules (GJ). Propane consumption reported in litres are also reported. These consumptions are then converted to equivalent kilowatt hours (ekWh). Total energy consumption is calculated by adding ekWh of gas and propane use to electrical consumption, already reported in kWh. Determining intensity involves accounting for square footage of all facilities in our inventory. This

produces the EUI measured in ekWh/sq ft. Please refer to Appendix D: Energy Intensity per Site (ekWh/sqft), Appendix B: Electricity Consumption per Site (kWh/sqft) and Appendix C: Natural Gas & Propane Consumption per Site (ekWh/sqft).

Within Grand Erie's 2019-20 Consumption report, the average EUI for all facilities was 16.9 ekWh/sq ft. All values below within this report use raw data and not weather-normalized data.

All Sites:

Outlined below is Grand Erie's average and median energy use intensity figures from the current and previous two Consumption reports. This represents all Grand Erie -owned properties including administration sites. Overall, the combined energy use intensity has decreased in the 2019-20 year. This was impacted due to the onset of the global pandemic and the closing of schools in March 2020.

Table 1

Energy Use Intensity (ekWh/sq foot)	2017-18	2018-19	2019-20
Average	18.49	18.68	16.90
Median	18.20	18.38	16.59

Elementary:

Overall, Grand Erie Elementary sites consumed 7,947,840 kWh of electricity and 2,002,244 m³ of natural gas in the 2019-20 year. This accounts for 58 elementary sites. The chart below outlines the average and median energy use intensity (ekWh/sq. ft) for Grand Erie's Elementary sites separated by hydro, natural gas and total energy as per the 2019-20 Consumption Report. All figures are in ekWh/sq ft.

Table 2

Energy Use Intensity (ekWh/sq foot)	Hydro	Natural Gas	Total Energy
Average	4.20	11.57	16.18
Median	3.75	11.81	16.01

Secondary:

Overall, Grand Erie Secondary sites consumed 8,363,695 kWh of electricity and 2,286,607 m³ of natural gas in the 2019-20 year. This accounts for 14 secondary sites including GELA on Rawdon. The chart below outlines the average and median energy use intensity (ekWh/sq ft) for Grand Erie's Secondary sites separated by hydro, natural gas and total energy as per the 2019-20 Consumption Report. All figures are in ekWh/sq ft.

Table 3

Energy Use Intensity (ekWh/sq foot)	Hydro	Natural Gas	Total Energy
Average	4.48	13.52	18.41
Median	3.87	13.83	18.12

Administration:

Overall, Grand Erie administration sites consumed 730,873 kWh of electricity and 118,464 m³ of natural gas in the 2019-20 year. The chart below outlines the average and median energy use intensity (ekWh/sq ft) for Grand Erie's Administration sites separated by hydro, natural gas and total energy as per the 2019-20 Consumption Report. All figures are in ekWh/sq ft. Average and median wasn't provided for administration sites due to small quantity of sites.

Table 4

Energy Use Intensity (ekWh/sq foot)	Hydro	Natural Gas	Total Energy
Education Centre/Facility Services	11.06	15.69	27.22
Joseph Brant Learning Centre	6.81	1.51	22.93
Teachers Resource Centre	13.33	15.65	23.14
Grandview Central (closed)	0.71	13.93	15.06

Energy intensity is driven by energy consumption at each site. This is impacted by several variables that must be considered. It is important to note that some variables are beyond the control of the school board itself. For example, both community growth and Ministry-driven expectations require additional space and extended hours at a facility which would increase energy demand and consumption. Examples of other facility variables include:

- Year of construction and building design, including Building Automation Systems (BAS), building envelope, etc.
- Building area, including renovations, additions, portables, etc.
- HVAC equipment on site, including system type, system age, lifecycle considerations, areas with air conditioning and vented spaces.
- Site use/Facility Type – elementary, secondary, administrative or maintenance facility
- Shared use schools, including libraries, literacy centres, sports fields, childcare facilities and other third-party partnerships.
- Hours of operations and specialty programming, including before and after school programs, community use, summer school, etc.

Other variables which greatly impact the energy consumption at a site include:

- Weather as colder or hotter weather conditions drive energy demand
- Location and topography of the site (lake effect, wind, etc.)
- Occupancy behaviour

Impact of COVID-19:

The impact of COVID-19 on schools during the 2019-20 school year is evident. The school year operated as usual until March 2020 when schools were closed. Where possible, schools were scheduled in the Building Automation System on an unoccupied mode in order to reduce energy consumption. Facility Services staff continued to return to schools on a weekly basis to complete water flushing and necessary building checks. Facility Services staff returned full time to all facilities in June 2020. Despite the school closure for 3 months of the regular school year, this had less impact on our natural gas consumption as the heating season was essentially complete.

Example of variable: Age of Building & Performance:

Below is an example of one of the variables. The age of the facility plays a large role in the energy performance of a building. Newer facilities include air conditioning, additional fans and pumps to draw in outside air, and were built based on different standards compared to our older facilities. As you can see, newer facilities use more hydro than schools over 100 years old, however, they use much less natural gas. All figures are in ekWh/sq ft.

Table 5

Energy Use Intensity (ekWh/sq foot)	Hydro	Natural Gas	Total Energy
1-24 years old: 4 SCHOOLS	Average: 4.52 Median: 4.61	Average: 7.51 Median: 7.39	Average: 12.26 Median: 12.23
25-49 years old: 11 SCHOOLS	Average: 6.56 Median: 5.57	Average: 10.41 Median: 9.9	Average: 17.28 Median: 16.91
50-74 years old: 43 SCHOOLS	Average: 3.76 Median: 3.41	Average: 12.71 Median: 12.91	Average: 17.21 Median: 16.76
75-99 years old: 7 SCHOOLS	Average: 3.43 Median: 3.48	Average: 12.21 Median: 11.84	Average: 16.01 Median: 14.51
100 years +: 7 SCHOOLS	Average: 4.04 Median: 3.62	Average: 11.06 Median: 11.32	Average: 15.43 Median: 15.03

Note: this does not include administration facilities as they use energy differently.

It is important to note when reviewing this information that budget and actual expenses cannot be compared directly year over year as a metric for operational efficiencies. Consumption is weather dependent, and costs are market dependent. Market pricing can greatly fluctuate due to weather, demand, storage and other variables. As a strategy, The Grand Erie purchases energy sources (electricity, natural gas and propane) in bulk as a commodity, when available, through a consortium.

Outlined below is Grand Erie's total utility consumptions from previous Consumption reports. This accounts for all elementary, secondary and administration sites. Values below are raw data.

Table 6

Energy Consumed	2017-18	2018-19	2019-20
Total Electricity (kWh)	21,242,880	20,120,996	17,042,409
Total Natural Gas (m ³)	4,758,286	5,009,260	4,407,316
Total Propane (L)	26,234	34,891	32,494

Grand Erie's Top 10 Performing Buildings:

Outlined below is Grand Erie's top 10 performing buildings based on the total energy use intensity alone (hydro + natural gas intensity) for the 2019-20 Consumption Reporting Year. This includes full time schools only.

Table 7

Site:	Energy Use Intensity:
Central Public School	9.05
Mapleview Elementary School	9.60
Cobblestone Elementary School	9.92
Brantford Collegiate Institute & Vocational School	10.37
Walsh Public School	11.11
Thompson Creek Elementary School	11.67
Hagersville Elementary School	11.71
Major Ballachey Public School	11.92
Ryerson Heights Elementary School	12.20
Dunnville Secondary School	12.80

Grand Erie's Bottom 10 Performing Buildings:

Outlined below is Grand Erie's bottom 10 performing buildings based on the total energy use intensity alone (hydro + natural gas intensity) for the 2019-20 Consumption Reporting Year.

Table 8

Site:	Energy Use Intensity:
Education Centre	27.22
Tollgate Technological Skills Centre	27.08
Hagersville Secondary School	25.91
Echo Place School	25.32
Waterford Public School	24.96
McKinnon Park Secondary School	23.99
Teachers Resource Centre	23.14
Joseph Brant Learning Centre	22.93
École Confédération	22.71
Oneida Central Public School	21.50

Energy Demand and Conservation:

As Grand Erie continues to monitor energy consumption and performance data under O. Reg 507/18, energy management initiatives and strategies will continue to be implemented and developed. These initiatives and strategies can be categorized into three categories.

- a) Design/Construction/Retrofit
- b) Operations and Maintenance
- c) Occupant Behaviour

The design, construction and retrofits encompass the original and ongoing intent of how a building and its systems are to perform as a whole. This includes but is not limited to: HVAC upgrades, Building Automation System expansion and upgrades, and building envelope upgrades, including windows, doors and masonry. Grand Erie has completed an LED retrofit at all schools. This also includes the extensive work which is taking place on our masonry, windows and roofs which will improve our buildings energy performance and conservation.

In the 2019-20 school year, the following capital projects took place assisting in the efficiency of schools. Many of these projects were completed in the 2020 summer months and will impact future energy consumption.

- **Roofing Projects: increase insulation. Total: \$3,739,238**
 - Delhi District Secondary School
 - Delhi Public School
 - Joseph Brant Learning Centre
 - St George-German Public School
 - Caledonia Centennial Public School
 - Walpole North Elementary School
 - J.L. Mitchener Public School
 - Dunnville Secondary School
 - Branlyn Community School
 - McKinnon Park Secondary School
 - Central Public School
 - Waterford Public School
- **Boiler and Rooftop Units: \$850,000**
 - Echo Place School
 - Grandview Public School
 - Branlyn Community School
 - King George Public School
 - Central Public School
 - Glen Morris Central Public School
- **Window Replacement: \$302,000**
 - Paris District High School
 - Echo Place School
 - Brantford Collegiate Institute & Vocational School – Gym
 - North Park Collegiate & Vocational School
 - James Hillier Public School
 - Port Rowan Public School
 - Bellview Public School

The Operations and Maintenance includes the strategies which are used to ensure that existing buildings and equipment perform at peak efficiency. This includes but is not limited to: necessary repairs to mechanical and HVAC systems, preventative maintenance, policy and planning, and real-time energy of hydro and water monitoring.

In the 2019-20 school year, an additional twenty water monitoring devices, called 'Flowies' were installed at various locations.

Finally, an efficient building requires educated occupants. The occupant behaviour strategies will assist in educating occupants, including staff, students, community users and the wider community, in changing specific behaviours in order to reduce our energy consumption. This includes but is not limited to: staff and student conference, Building Automation training, energy workshops, Ontario EcoSchools program, partnerships with outside organizations (i.e. Conservation Authorities), and energy monitoring and dashboard. Many of these initiatives were on hold during the 2019-20 school year due to the onset of COVID-19

Summary:

This report was created in order to outline the Green Energy Act's Ontario Regulation 507/18 requirements for Ontario school boards including Grand Erie District School Board. It has hopefully provided readers with a better understanding and insight into energy consumption and performance of our sites. The Grand Erie District School Board will continue to expand and improve its energy and environmental conservation initiatives for the betterment of our students, staff, school community, and the environment.

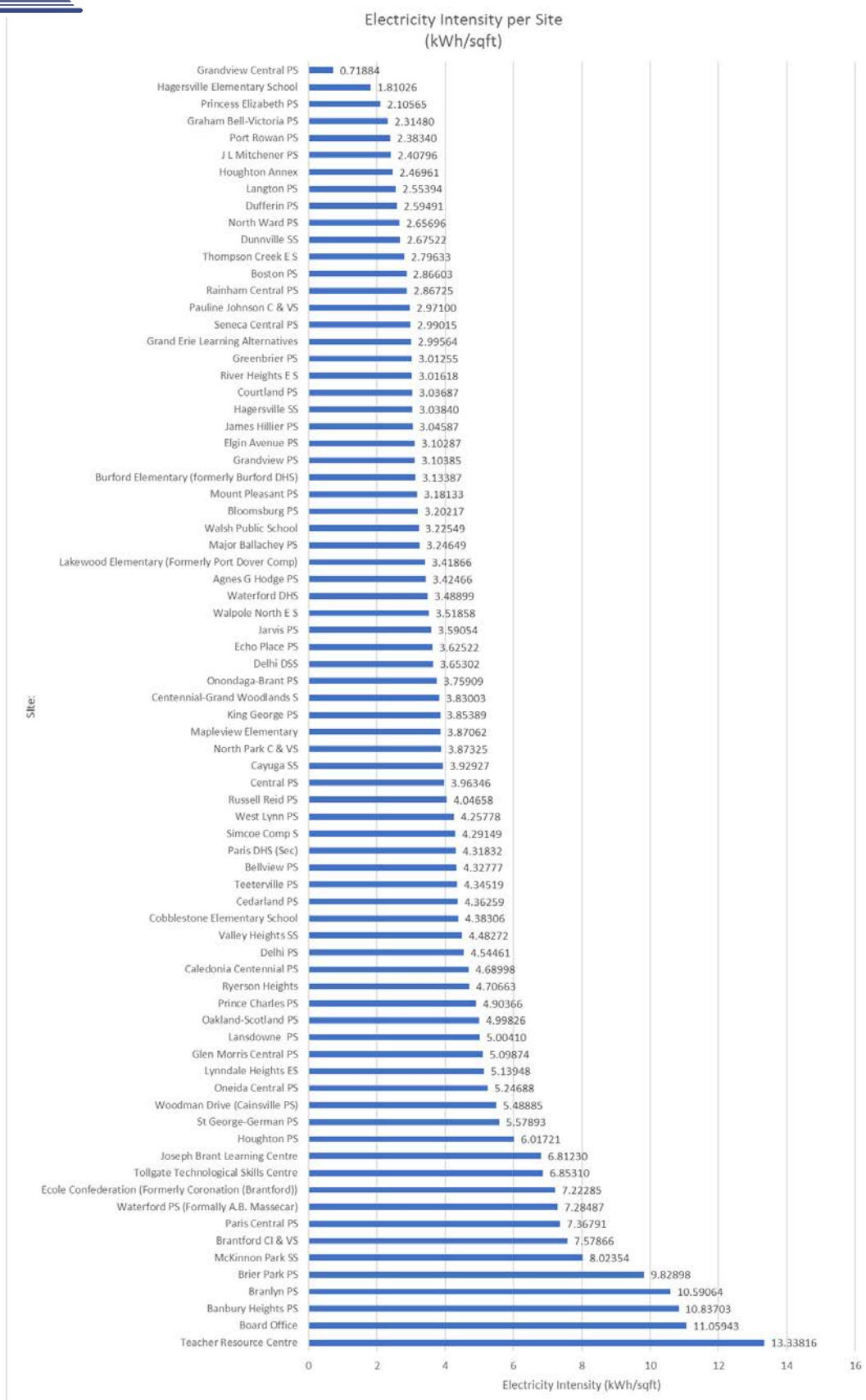
Appendix A: Energy Consumption and Greenhouse Gas Emissions Reporting in FY2020

Energy Consumption and Greenhouse Gas Emissions Reporting - for 2019																	
Confirm consecutive 12-mth period (mth-yr to mth-yr)	Sept/2019 - Aug/2020																
	Sector	School Board															
	Agency Sub-sector	School Board															
	Organization Name	Grand Erie District School Board															
Operation Name	Operation Type	Address	City	Postal Code	Total Floor Area	Unit	Avg hrs/wk	Swimmin g Pool (Yes/No)	Number of Portables	Electricity Quantity	Electricity Unit	Natural Gas Quantity	Natural Gas Unit	Propane Quantity	Propane Unit	GHG Emissions (Kg)	Energy Intensity (ekWh/sqft)
Agnes G Hodge PS	School	52 Clench Avenue	Brantford	N3T 1B6	39,905.37	Square fee	80	No	0	136,662.36768 kWh		35,264.00159	Cubic Meter			70,835.58587	12.81633
Banbury Heights PS	School	141 Banbury Rd	Brantford	N3P 1E3	38,125.77	Square fee	80	No	0	413,169.94922 kWh		35,726.09318	Cubic Meter			80,135.24424	20.79588
Bellview PS	School	97 Tenth Avenue	Brantford	N3S 1G5	37,494.46	Square fee	80	No	0	162,267.40967 kWh		48,220.38996	Cubic Meter			96,111.54599	17.99580
Bloomsburg PS	School	25 Concession 12, R.R. #3	Waterford	N0E 1Y0	23,433.03	Square fee	80	No	0	75,036.46606 kWh		31,506.10484	Cubic Meter			61,852.87871	17.49139
Board Office	Administrative offices and related facilities	349 Erie Avenue	Brantford	N3S 2H7	29,264.00	Square fee	80	No	2	323,643.28516 kWh		44,513.84706	Cubic Meter			94,021.46295	27.22548
Boston PS	School	2993 Cockshutt Rd., R.R. #1	Waterford	N0E 1Y0	21,893.79	Square fee	80	No	0	62,748.26709 kWh		27,582.39400	Cubic Meter			54,060.14677	16.25519
Branlyn PS	School	238 Brantwood Park Rd	Brantford	N3P 1N9	37,576.81	Square fee	100	No	0	397,962.40820 kWh		38,358.02673	Cubic Meter			84,647.82946	21.43937
Brantford CI & VS	School	120 Brant Ave	Brantford	N3T 3H3	204,578.90	Square fee	80	No	0	1,550,433.40625 kWh		53,866.70556	Cubic Meter			149,088.20513	10.37701
Brier Park PS	School	10 Blackfriar Lane	Brantford	N3R 6C5	35,542.96	Square fee	80	No	3	349,350.96484 kWh		28,198.37156	Cubic Meter			63,958.37457	18.26063
Burford Elementary (formerly Burford DHS)	School	35 Alexander St	Burford	N0E 1A0	46,360.16	Square fee	80	No	0	145,286.70178 kWh		53,077.74319	Cubic Meter			104,777.53604	15.30161
Caledonia Centennial PS	School	110 Shetland St	Caledonia	N3W 2H1	29,923.67	Square fee	80	No	5	140,341.54102 kWh		23,566.51337	Cubic Meter			48,832.11426	13.05994
Cayuga SS	School	70 Highway #54	Cayuga	N0A 1E0	131,704.10	Square fee	80	No	0	517,501.13672 kWh		180,318.33196	Cubic Meter			356,684.51913	18.47994
Cedarland PS	School	60 Ashgrove Ave	Brantford	N3R 6E5	33,863.26	Square fee	80	No	0	147,731.36816 kWh		29,268.76475	Cubic Meter			59,838.13488	13.54841
Centennial-Grand Woodlands S	School	41 Ellenson Dr	Brantford	N3R 3E7	29,493.11	Square fee	80	No	0	112,959.40562 kWh		36,921.30509	Cubic Meter			73,246.62824	17.13454
Central PS	School	135 George St	Brantford	N3T 6B4	33,748.62	Square fee	80	No	2	133,761.44275 kWh		16,158.36785	Cubic Meter			34,625.55897	9.05190
Cobblestone Elementary School	School	179 Grandville Circle	Paris	N3L 0A9	50,326.00	Square fee	80	No	3	220,581.88965 kWh		26,234.33272	Cubic Meter			56,321.12968	9.92319
Courtland PS	School	1012 Queen Street, Box 245	Courtland	N0I 1E0	24,864.63	Square fee	80	No	0	75,510.66711 kWh		32,029.64183	Cubic Meter			62,857.14221	16.72716
Delhi DSS	School	393 James St	Delhi	N4B 2B6	89,890.49	Square fee	80	No	0	328,371.42908 kWh		91,041.96036	Cubic Meter			182,132.85094	14.41693
Delhi PS	School	227 Queen St	Delhi	N4B 2K6	36,551.00	Square fee	80	No	1	166,109.99376 kWh		50,657.66060	Cubic Meter			100,836.61073	19.27412
Dufferin PS	School	106 Chestnut Ave	Brantford	N3T 4C6	40,358.19	Square fee	80	No	3	104,725.96949 kWh		39,566.30854	Cubic Meter			77,996.44569	13.01416
Dunnville SS	School	110 Helena St	Dunnville	N1A 2S5	151,913.40	Square fee	80	No	0	406,401.12500 kWh		144,780.30830	Cubic Meter			286,109.82142	12.80397
Echo Place PS	School	723 Colborne St	Brantford	N3S 3R5	18,376.00	Square fee	80	No	0	66,617.09639 kWh		37,525.94941	Cubic Meter			72,977.59593	25.32839
Ecole Confederation (Formerly Coronation (Brantford))	School	54 Ewing D Dr	Brantford	N3R 5H8	31,502.00	Square fee	80	No	4	227,534.12500 kWh		45,925.10561	Cubic Meter			93,760.89204	22.71652
Elgin Avenue PS	School	80 Elgin Ave	Simcoe	N3Y 4A8	40,121.00	Square fee	80	No	0	124,490.35083 kWh		42,155.71521	Cubic Meter			83,494.32783	14.26963
Glen Morris Central PS	School	522 Glen Morris Rd E	Glen Morris	N0B 1W0	15,157.00	Square fee	80	No	0	77,281.55292 kWh				32,494.69218 Litre		52,428.80149	20.17136
Graham Bell-Victoria PS	School	56 Grand St	Brantford	N3R 4B2	34,103.00	Square fee	80	No	0	78,941.45766 kWh		39,140.56226	Cubic Meter			76,405.78685	14.51247
Grand Erie Learning Alternatives	School	365 Rawdon St	Brantford	N3S 6J3	20,343.79	Square fee	80	No	0	60,942.75552 kWh		34,615.86480	Cubic Meter			67,302.79721	21.07928
Grandview Central PS	Administrative offices and related facilities	11 Thrush St	Dunnville	N1A 1X7	19,711.00	Square fee	80	No	0	14,169.06934 kWh		26,609.49662	Cubic Meter			50,740.40681	15.06615
Grandview PS	School	68 North Park St	Brantford	N3R 4J9	31,757.00	Square fee	80	No	0	98,568.93216 kWh		35,664.37208	Cubic Meter			70,431.71586	15.03926
Greenbrier PS	School	33 White Oaks Ave	Brantford	N3R 5N8	22,068.00	Square fee	80	No	0	66,480.98508 kWh		30,758.44084	Cubic Meter			60,178.61379	17.82558
Hagersville Elementary School	School	40 Parkview Road	Hagersville	N0A 1H0	29,332.00	Square fee	80	No	0	53,098.47974 kWh		27,347.98205	Cubic Meter			53,322.90324	11.71917
Hagersville SS	School	70 Parkview Rd	Hagersville	N0A 1H0	132,596.60	Square fee	80	No	1	402,881.82831 kWh		285,477.58134	Cubic Meter			552,008.64112	25.91977
Houghton Annex	School	505 Fairground SR, R.R. #5	Langton	N0E 1G0	2,798.62	Square fee	40	No	0	6,911.49995 kWh		2,444.93091	Cubic Meter			4,833.06653	11.75425
Houghton PS	School	505 Fairground Sideroad	Langton	N0E 1G0	27,289.08	Square fee	80	No	4	164,204.14699 kWh		33,944.00707	Cubic Meter			69,179.24922	19.23676
J L Mitchener PS	School	Box 99 60 Munsee St South	Cayuga	N0A 1E0	35,900.22	Square fee	80	No	0	86,446.15605 kWh		36,872.86110	Cubic Meter			72,347.10047	13.32367
James Hillier PS	School	62 Queensway Dr	Brantford	N3R 4W8	30,211.06	Square fee	80	No	2	92,019.06028 kWh		35,635.55168	Cubic Meter			70,177.63299	15.58190
Jarvis PS	School	14 Monson St	Jarvis	N0A 1J0	31,947.30	Square fee	80	No	0	114,707.89941 kWh		30,658.08711	Cubic Meter			61,458.50109	13.78943
Joseph Brant Learning Centre	School	347 Erie Ave	Brantford	N3S 2H7	19,278.69	Square fee	80	No	3	131,332.13686 kWh		29,240.47870	Cubic Meter			59,284.92273	22.93171
King George PS	School	265 Rawdon St	Brantford	N3S 6G7	39,245.22	Square fee	80	No	0	151,246.63477 kWh		43,069.08625	Cubic Meter			86,036.51603	15.51718
Lakewood Elementary (Formerly Port Dover Comp)	School	713 St. George St	Port Dover	N0A 1N0	90,309.21	Square fee	80	No	0	308,736.09094 kWh		105,777.76207	Cubic Meter			209,394.40787	15.86680
Langton PS	School	23 Albert Street	Langton	N0E 1G0	20,214.62	Square fee	80	No	0	51,626.86719 kWh		31,675.23020	Cubic Meter			61,459.27098	19.20710
Lansdowne PS	School	21 Preston Blvd	Brantford	N3T 5B1	28,997.97	Square fee	80	No	0	145,108.65887 kWh		30,513.71742	Cubic Meter			62,111.95418	16.18740
Lynndale Heights ES	School	55 Donly Drive South	Simcoe	N3Y 5G7	35,284.10	Square fee	80	No	0	181,341.81824 kWh		40,386.38670	Cubic Meter			81,881.62235	17.30409
Major Ballachey PS	School	105 Rawdon St	Brantford	N3S 6C7	47,813.29	Square fee	80	No	0	155,225.28757 kWh		39,058.21605	Cubic Meter			78,574.69803	11.92822
Mapleview Elementary	School	223 Fairview Ave W	Dunnville	N1A 1M4	45,325.00	Square fee	80	No	0	175,436.00000 kWh		24,448.45940	Cubic Meter			51,568.97867	9.60328
McKinnon Park SS	School	91 Haddington St	Caledonia	N3W 2H2	123,854.10	Square fee	80	No	10	993,748.50781 kWh		186,179.55838	Cubic Meter			382,278.59820	23.99939
Mount Pleasant PS	School	667 Mt. Pleasant Road	Mt. Pleasant	N0E 1K0	18,556.98	Square fee	80	No	0	59,035.96851 kWh		23,710.42362	Cubic Meter			46,626.57014	16.76054
North Park C & VS	School	280 North Park St	Brantford	N3R 4L1	174,387.20	Square fee	80	No	5	675,444.72276 kWh		233,866.59926	Cubic Meter			462,737.33399	18.12591
North Ward PS	School	107 Silver St	Paris	N3L 1V2	43,927.52	Square fee	80	No	0	116,713.52979 kWh		59,239.44198	Cubic Meter			115,556.29986	16.98928
Oakland-Scotland PS	School	15 Church Street West	Scotland	N0E 1R0	21,667.75	Square fee	80	No	0	108,301.00107 kWh		30,493.89885	Cubic Meter			60,952.84491	19.95516
Oneida Central PS	School	661 4th Line	Caledonia	N3W 2B2	20,634.61	Square fee	80	No	3	108,267.27295 kWh		31,561.38505	Cubic Meter			62,970.03533	21.50245
Onondaga-Brant PS	School	21 Brant School Rd., R.R. #1	Brantford	N3T 5L4	19,906.23	Square fee	80	No	1	74,829.34988 kWh		27,656.93250	Cubic Meter			54,569.21809	18.52491
Paris Central PS	School	7 Broadway St E	Paris	N3L 2R2	24,756.99	Square fee	80	No	0	182,407.28223 kWh		19,230.37672	Cubic Meter			41,915.96655	15.62320
Paris DHS (Sec)	School	231 Grand River St N	Paris	N3L 2N6	148,945.00	Square fee	80	No	6	643,192.45200 kWh		229,110.24692	Cubic Meter			452,762.02238	20.66619
Pauline Johnson C & VS	School	627 Colborne St	Brantford	N3S 3M8	184,622.60	Square fee	80	No	0	548,513.85156 kWh		212,786.27976	Cubic Meter			419,014.34834	15.22002

Port Rowan PS	School	48 College Avenue	Port Rowan	N0E 1M0	22,927.13 Square fee	80	No	0	54,644.52539 kWh	26,978.98824 Cubic Meter	52,672.38622	14.88940
Prince Charles PS	School	40 Morton Ave	Brantford	N3R 2N5	28,621.24 Square fee	80	No	0	140,348.86279 kWh	38,070.10849 Cubic Meter	76,253.22590	19.04004
Princess Elizabeth PS	School	60 Tecumseh St	Brantford	N3S 2B5	25,887.21 Square fee	80	No	0	54,509.32161 kWh	37,615.82464 Cubic Meter	72,778.55625	17.54851
Rainham Central PS	School	RR 1 572 Concession 5	Fisherville	N0A 1G0	23,027.77 Square fee	80	No	1	66,026.36328 kWh	26,270.11660 Cubic Meter	51,679.01310	14.99143
River Heights E S	School	37 Forfar St.	Caledonia	N3W 1L6	52,887.18 Square fee	80	No	1	159,517.02643 kWh	54,361.23537 Cubic Meter	107,637.78168	13.94017
Russell Reid PS	School	43 Cambridge Dr.	Brantford	N3R 5E3	29,267.07 Square fee	80	No	0	118,431.47879 kWh	29,857.03617 Cubic Meter	60,057.48117	14.88859
Ryerson Heights	School	33 Dowden Ave	Brantford	N3T 0A3	64,790.63 Square fee	80	No	3	304,945.23769 kWh	45,740.17720 Cubic Meter	95,770.21022	12.20951
Seneca Central PS	School	2767 Reg Rd #9	York	N0A 1R0	16,913.01 Square fee	80	No	0	50,572.47961 kWh	20,098.79961 Cubic Meter	39,540.42838	15.61981
Simcoe Comp S	School	40 Wilson Ave	Simcoe	N3Y 2E5	146,606.80 Square fee	80	No	0	629,161.62451 kWh	173,594.29509 Cubic Meter	347,374.50353	16.87564
St George-German PS	School	3 College Street	St. George	N0E 1N0	41,430.29 Square fee	80	No	0	231,136.89063 kWh	44,206.64963 Cubic Meter	90,621.71983	16.91891
Teacher Resource Centre	Administrative offices and related facilities	108 Tollgate Rd	Brantford	N3R 4Z6	19,622.56 Square fee	80	No	0	261,728.89111 kWh	18,100.53089 Cubic Meter	42,197.01692	23.14159
Teeterville PS	School	229 Teeter St. PO Box 1	Teeterville	N0E 1S0	21,194.14 Square fee	80	No	0	92,092.64373 kWh	28,736.25731 Cubic Meter	57,135.88308	18.75496
Thompson Creek E S	School	800 Cross St W	Dunnville	N1A 1N7	52,463.30 Square fee	80	No	0	146,704.86536 kWh	43,848.24551 Cubic Meter	87,371.21422	11.67891
Tollgate Technological Skills Centre	School	112 Tollgate Rd	Brantford	N3R 4Z6	98,867.56 Square fee	80	No	6	677,549.32813 kWh	188,184.79073 Cubic Meter	376,434.20702	27.08204
Valley Heights SS	School	2561 #59 Highway	Langton	N0E 1G0	109,092.20 Square fee	80	No	0	489,030.20710 kWh	118,688.32238 Cubic Meter	239,297.56438	16.04536
Walpole North E S	School	1895 Regional Rd. #55, R.R. #5	Hagersville	N0A 1H0	20,654.65 Square fee	80	No	1	72,675.08453 kWh	24,277.27321 Cubic Meter	48,113.89607	16.01037
Walsh Public School	School	933 St. John's Road West ,RR#2	Simcoe	N3Y 4K1	38,065.47 Square fee	80	No	4	122,779.83304 kWh	28,265.56210 Cubic Meter	57,181.10473	11.11716
Waterford DHS	School	227 Main St., South	Waterford	N0E 1Y0	126,260.70 Square fee	80	No	0	440,522.66516 kWh	154,096.82222 Cubic Meter	304,763.65988	16.45983
Waterford PS (Formally A.B. Massecar)	School	100 East Church St	Waterford	N0E 1Y0	20,305.31 Square fee	80	No	3	147,921.60016 kWh	33,784.55467 Cubic Meter	68,381.60616	24.96767
West Lynn PS	School	18 Parker Dr	Simcoe	N3Y 1A1	28,815.63 Square fee	80	No	0	122,690.60083 kWh	38,892.68835 Cubic Meter	77,270.31737	18.60218
Woodman Drive (Cainsville PS)	School	51 Woodman Dr	Brantford	N3S 4K3	26,063.71 Square fee	80	No	4	143,059.80078 kWh	24,010.03051 Cubic Meter	49,753.47326	15.27922

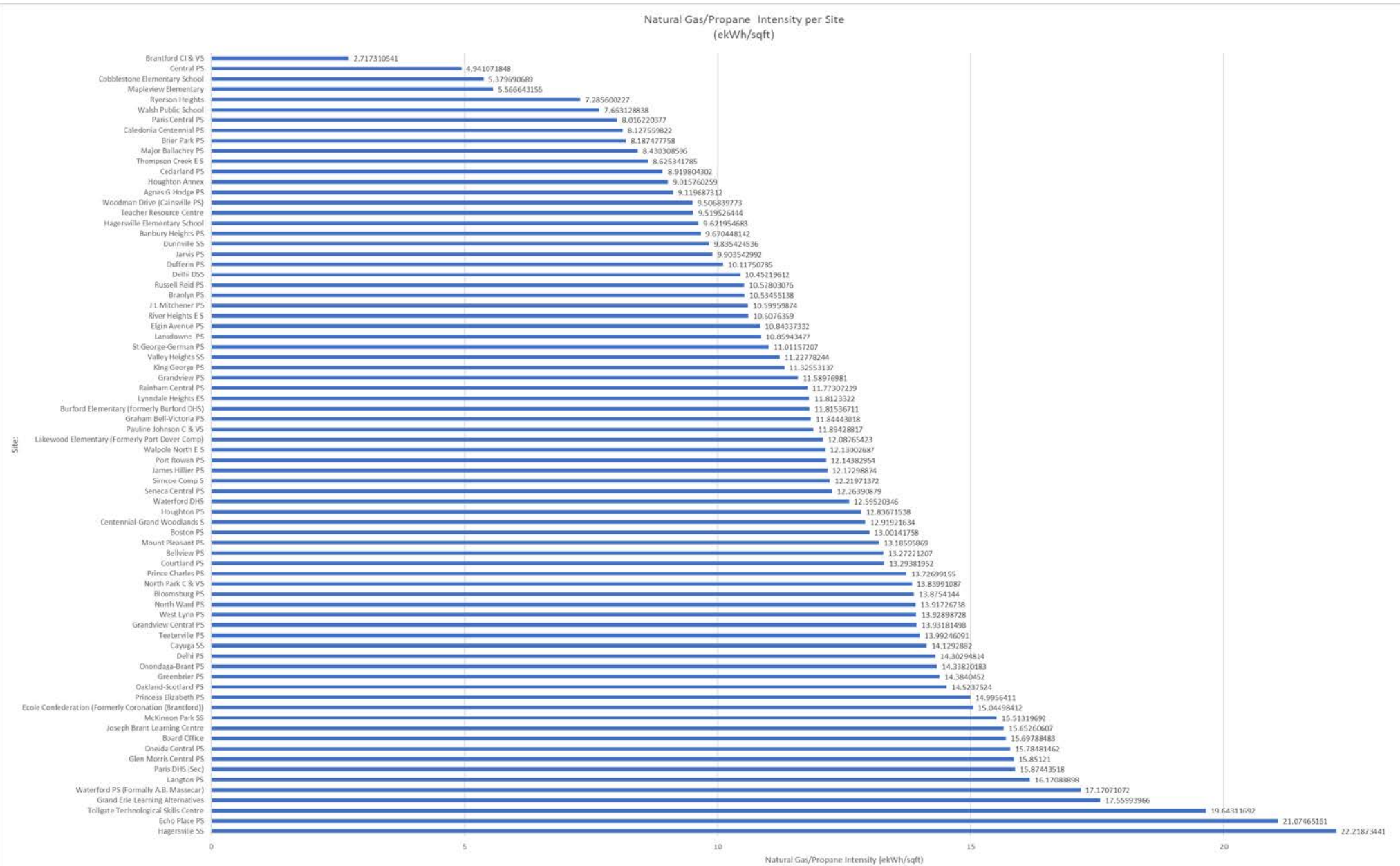


Appendix B: Electricity Intensity per Site (kWh/sqft) for 2019-2020





Appendix C: Natural Gas and Propane Intensity per Site (ekWh/sqft) for 2019-2020





Appendix D: Energy Intensity per Site (ekWh/sqft) for 2019-2020

