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Education Sector Background

Funding and Energy Management Planning

Each year school boards receive approximately $1.4 billion in School R

Other Variables:

- Programs
  - Child care
  - Before/After School Programs
  - Summer School
  - Community Use
    - Outdoor ice rinks
- Occupancy
  - Significant increase or decrease in number of students
  - Significant increase in the hours of operation
  - New programs being added to a site
- Air Conditioning
  - Significant increase in air-conditioned space
  - Portables

PART I: A REVIEW OF PROGRESS & ACHIEVEMENTS in the PAST FIVE YEARS

A. The Board’s Asset Portfolio

The following table outlines the energy-related variables and metrics in the Board’s asset portfolio that changed from the baseline Fiscal Year 2017 to 2018 to the end of the five-year reporting period Fiscal Year 2022 to 2023.

Table 1: Board’s Asset Portfolio

Key Metrics	(Baseline Year) Fiscal Year 2017 to 2018	Fiscal Year 2022 to 2023	Variance
Total Number of Buildings	77	73	-4
Total Number of Portables/Portapaks	70	99	+29
Total Floor Area (ft^2)ngs			

B.

programs (refer to the Note to Readers beginning on page 9) which will greatly impact energy consumption.

As a result, weather normalized Energy Intensity[4] is the most accurate measurement that allows the evaluation of a board’s energy use from one year to another as it cancels out any change in floor area. The unit of measurement used is either equivalent kilowatt hours per square foot (ekWh/ft2) or equivalent kilowatt hours per square metre (ekWh/ft2).

Table 4: Weather Normalized Values

Weather Normalized Values	Fiscal Year 2017 to 2018 (Baseline Year)	Fiscal Year 2022 to 2023 (Most Recent Data Available)

To rg410.6 0.48410.a( )Tj-35 ())]TJ0 Tc CID74.761 M4y-6.6 (C)-6.6 (n21 Td.oT g/TT2 1 Tf0.0 gd7ET/Artifactw

NOTE TO READERS:

When reviewing annual Actual Energy Savings and Actual Energy Percentage across the five (5) years in the chart above, the following should be considered:

1. Conservation goals in the above chart were forecast in Spring 2019 based on the assumption that operational parameters would remain consistent from FY2019 through FY2023. However, the pandemic that arrived in early 2020, significantly changed how schools operated and impacted their energy consumption.

2. As a result of significant operational changes from one year to the next from FY2019 to FY2023, an apple-to-apple comparison of Energy Intensity (ekWh/ft^2 – the quantity of energy consumed per area) is not possible.
   - Factors that reduced energy consumption include:
     - temporary school closures in FY2020 and FY2021, due to the pandemic
       - boards with centralized Building Automation Systems (BAS) that could be remotely programed to “unoccupied set points”, should show a reduction in consumption
     - temporary suspension of community use of schools, before/after school programs, childcare programs, continuing education, and summer school programs
       - for schools with these programs, the number of “occupied set point” operating hours would be significantly reduced
   - Factors that increased consumption include:
     - Implementation of new health and safety factors in FY2021 through FY2023 to address pandemic issues, such as:
       - increased ventilation (intake of fresh air),
       - increased filtration requirements
       - expanded operating hours of HVAC equipment

[illegible]

A board’s ability to achieve their 2019 forecasted Conservation Goals may be limited by some or all the above factors.

Before and After School Programs

Before-School and After-School Programs need a facility’s Heating, Ventilation, and Air Conditioning (also known as eqJ-pi(ng,)471 (e)]TJ0 0.002 Tw (o07 0 Td8( )Tj-96(i)2.6 (l)217]TJ0 Tc16TTw

Community Hubs
Many schools now offer a greater range of:

- events (cultural),
- programs (arts, recreation, childcare), and
- services (health, family resource centres).

The dramatic increase in community use means that many schools now run from 6:00 a.m. until 11:00 p.m. during weekdays and are open many times on weekends. The use of these spaces during non-

Ventilation and Filtration

In consultation with the Office of the Chief Medical Officer of Health, the Ministry of Labour, Immigration, Training and Skills Development and others, school boards have been expected to continue to build on established practices to optimize air quality to support healthy and safe learning environments for students and staff.

Many of these new recommendations/requirements can impact utility consumption. For instance, the implementation of standalone HEPA filtration units has impacted energy consumption, primarily electricity.

E. Cumulative Energy Conservation Goal

The following table compares the 2019 Forecasted Cumulative Energy Intensity Conservation Goal with the Actual Cumulative Energy Intensity Reduced Savings.

Table 6: Cumulative Energy Intensity Goal from Fiscal Year 2018 to 2019 through Fiscal Year 2022 to 2023

Cumulative Energy Intensity	.6 r11.04 377.

F. <u>Measures Implemented from Fiscal Year 2018 to 2019 to Fiscal Year 2022 to 2023</u>

A list of the measures implemented, the related costs, and the fiscal year that the measure was implemented within the Board are outlined in the included **Appendix: Investments in Energy Efficiency between Fiscal Year 2019 and Fiscal Year 2023.** Here is the list of the information included:

1. Design, Construction and Retrofit Investments
2. Operations and Maintenance Investments
3. Occupant Behaviour Investments
4. Summary of All Investment Types

PART II – ENERGY CONSERVATION and DEMAND MANAGEMENT PLAN for

Operations and Maintenance

Definition

Operations and maintenance include the strategies the Board uses to make sure that the existing buildings and equipment performs at maximum efficiency. For the Board's relevant

B. Environmental Programs

In Fiscal Year 2022 to 2023, schools within the Board participated in environmental programs.

1. Eco Schools:
    -

F. Senior Management Approval of this Energy Conservation and Demand Management Plan

I confirm that The Greater Essex County District School Board's senior management has reviewed and approved this Energy Conservation and Demand Management Plan.

Vicki Houston

Full Name: Vicki Houston
Job Title: Director of Education
Date: July 1, 2024

Appendix A: Investments in Energy Efficiency between Fiscal Year 2019 and Fiscal Year 2023

Design, Construction and Retrofit Strategies	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Lighting / Electrical	**Investments in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**
High Efficiency Lighting Systems (D5020, D502001, D502003, D502004)	$ 1,200,808	$ 1,028,567	$ 129,187	$ 305,084	$ 491,778
Outdoor Lighting (D502004)	$ 50,000	$ 15,177	$ 3,710	$ -	$ 3,750
Occupancy Sensors (D5021, D5022)	$ 547,270	$ 5,819	$ -	$ -	$ -
Daylight Harvesting	$ -	$ -	$ -	$ -	$ -
Dimming Switches					
Other (Describe)					
HVAC	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**
Efficient Boilers (near condensing) (D3020, D302001, D302002)	$ -	$ -	$ -	$ -	$ -

Appendix A (continued): Investments in Energy Efficiency between Fiscal Year 2019 and Fiscal Year 2023

Operations and Maintenance Strategies	2018--2019	2019-20	2020-2021	2021-2022	2022-2023
Policy and Planning	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**
New School Design/Construction Guidelines and Specifications	$ -	$ -	$ -	$ -	$ -
Day and Night Temperature Guidelines for all Schools	$ -	$ -	$ -	$ -	$ -
Nighttime Blackout of Sites - Interior	$ -	$ -	$ -	$ -	$ -
Nighttime Blackout of Sites - Exterior	$ -	$ -	$ -	$ -	$ -
Procures Only Energy Star Certified Appliances	$ -	$ -	$ -	$ -	$ -
Preventative Maintenance (re-commissioning, coil cleaning, filter changes)	$ 12,984	$ 33,608	$ 246,940	$ 469,322	$ 268,855
Daylight Harvesting (servicing)	$ -	$ -	$ -	$ -	$ -
Demand Ventilation (servicing)	$ -	$ -	$ -	$ -	$ -
Water Leak Detection System					
Other (Describe)	$ -	$ -	$ -	$ -	$ -
Energy Audits	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**	**Investment in Energy Management Strategies**

Appendix B: Calculating Energy Conservation Goals Fiscal Year 2024 to Fiscal Year 2028-