RICHMOND
SCHOOL DISTRICT NO.38

2024 PSO Climate Change Accountability Report

School District 38
(Richmond)

Acknowledgement of Territory

The Richmond School District acknowledges and thanks the First Peoples of the hən̓q̓əmin̓əm̓ language group on whose traditional and unceded territories we teach, learn and live.

PART 1. Legislative Reporting Requirements

DECLARATION STATEMENT:

This PSO Climate Change Accountability Report for the period January 1, 2024, to December 31, 2024, summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2024 to minimize our GHG emissions, and our plans to continue reducing emissions in 2025 and beyond.

By June 30, 2025, School District 38's final 2024 *Climate Change Accountability Report* will be posted to our website at *www.sd38.bc.ca*.

EMISSION REDUCTIONS: ACTIONS & PLANS

At its Public Meeting on December 15, 2021, the Richmond Board of Education adopted its new District Sustainability & Climate Action Plan (DSCAP). The DSCAP is the strategy the Richmond School District is following to reach our targets of a 50% reduction in greenhouse gas emissions from building sources, and a 40% reduction from mobile sources by 2030 and net zero GHG emissions by 2050, based on the 2007 baseline.

The DSCAP is part of the District's 2020-2025 Strategic Plan. School District 38 is working on establishing a new 5-year DSCAP in conjunction with the Districts new 5-year Strategic Plan, and further updates will be communicated as development continues.

STRATEGIC PRIORITY 3

Optimized Facilities and Technology

3

GOAL 2

The district's facilities are well-maintained, equitable, safe and conducive to learning.

OBJECTIVES

I. Provide equitable learning environments through effective and efficient facilities planning, management and resource allocation.
II. Provide clean, healthy and safe facilities.
III. Implement the 2020 Maintenance Review recommendations to optimize service delivery and improve the quality and timeliness of maintenance to our facilities.
IV. Implement strategic recommendations in the Long-Range Facilities Plan.
V. Work collaboratively with the Ministry of Education to accelerate seismic upgrading of our schools.
VI. Create learning environments that are flexible and support inclusive educational practices.

GOAL 3

The district fosters energy efficient and environmentally sustainable facilities and practices.

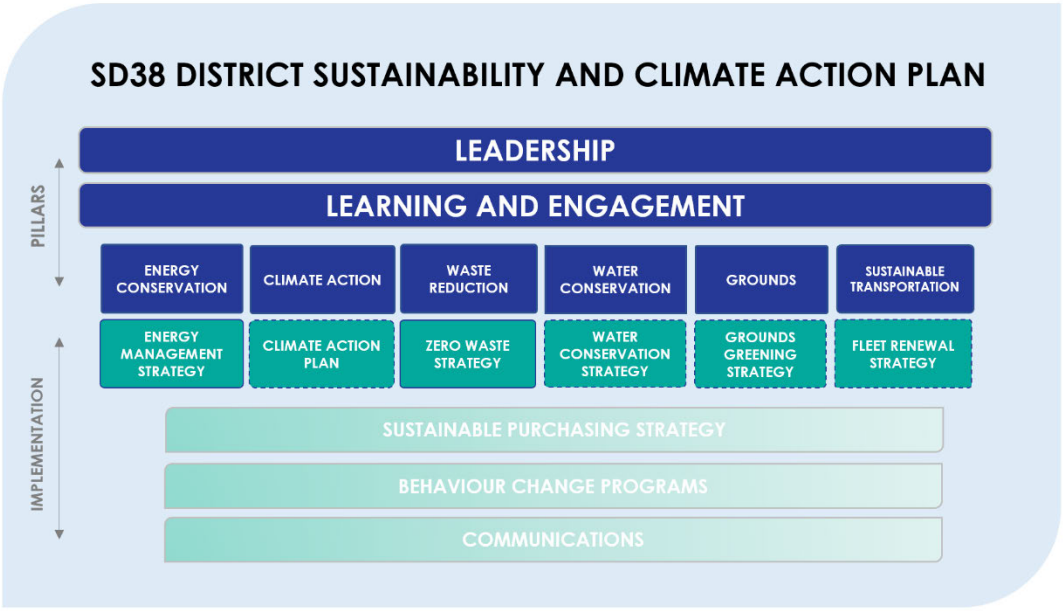
OBJECTIVES

I. Develop and implement a five-year Sustainability and Climate Action Plan.
II. Improve the energy efficiency, climate resiliency and sustainability of all facilities through capital improvements.
III. Implement sustainable practices and programs to improve waste diversion rates, reduce waste generation, reduce greenhouse gas emissions, conserve water and promote climate action.
IV. Increase sustainability education, awareness training and learning opportunities for staff and students.

The DSCAP itself has nine Pillars that guide how the Richmond School District links our core mandate of education with sustainability and climate action. The genesis of these pillars was from the active leadership in environmental stewardship dating back to 2011, and have a number of associated Board policies, regulations, and guidelines:

- Policy 512.14.1 - Environmental Stewardship
- Regulation 512.14.1-R - Environmental Stewardship
- Administrative Guideline 512.14.1-G - Environmental Stewardship
- Administrative Guideline 512.14.1-G - Energy Conservation
- Administrative Guideline 512.14.1-G - Grounds Greening
- Administrative Guideline 512.14.1-G - Sustainable Purchasing
- Administrative Guideline 512.14.1-G - Sustainable Transportation
- Administrative Guideline 512.14.1-G - Waste Management
- Administrative Guideline 512.14.1-G - Water Management

How the pillars interact is shown in the following:



For the 2021-26 period covered by the DSCAP, a summary of overall objectives is as follows:

Overview

In 2024, SD38 achieved a 31% reduction in building and a 17% reduction in fleet emissions from the baseline in 2007, making good progress in both metrics towards our 2030 targets.

Richmond School District 38 (SD38) GHG Emissions [tonnes CO_2e] Comparison in 2023 & 2024

Types of emissions	2023	2024	% Change
A. Stationary Sources - Buildings [tCO_2e]	5,197	5,046	-2.90%
B. Mobile Sources - Fleet [tCO_2e]	425	436	+2.55%
C. Office Paper [tCO_2e]	247	249	+0.77%
D. Fugitive Emissions [1][tCO_2e]	/	179	/
Total [tCO_2e]	**5,869**	**5,910**	**+0.70%**

The 0.70% rise in total emissions in 2024 is largely attributed to the inclusion of fugitive emissions, which SD38 began tracking this year. This new reporting requirement comes from the B.C. Ministry of Energy and Climate Solutions, as outlined in the "2024 B.C. Best Practices – Methodology for Quantifying Greenhouse Gas Emissions." Fugitive emissions accounted for 179 tCO_2e, approximately 3% of the total emissions.

Richmond School District 38 (SD38) GHG Emissions [tonnes CO_2e] Comparison in 2023 & 2024 (excluding Fugitive Emissions)

Types of emissions	2023	2024	% Change
A. Stationary Sources - Buildings [tCO_2e]	5,197	5,046	-2.90%
B. Mobile Sources - Fleet [tCO_2e]	425	436	+2.55%
C. Office Paper [tCO_2e]	247	249	+0.77%
Total [tCO_2e]	**5,869**	**5,731**	**-2.35%**

Excluding fugitive emissions, the total emissions for 2024 would be 5,731 tCO_2e. SD38 is pleased to see a continuous reduction in stationary source emissions. The slight increase in mobile source and office paper emissions mainly resulted from the addition of approximately 500 students in 2024, two modular classroom additions, and four new daycare facilities, which will be further addressed in *"Section A. Stationary Sources – Buildings."* SD38 recognizes the opportunity to address these areas in the future.

[1] Fugitive emissions are attributed to the loss of GHGs, such as hydrofluorocarbons (HFCs) from refrigeration equipment into the atmosphere. Refrigeration equipment means any equipment that employs the expansion and compression of refrigerants, regardless of its application. This includes refrigerators, heat pumps, air conditioners, and similar devices.

A. Stationary Sources - Buildings

In 2024, SD38 maintained the focus on greenhouse gas (GHG) reduction initiatives for our largest emissions source: buildings. Natural gas and propane consumption in 2024 was lower compared to 2023 due to various factors.

GHG emissions from buildings, which result from fossil fuels used for heating schools and other District facilities, accounted for 85.2% of the overall GHG emissions in 2024, compared to 88.2% in 2023 (Figures in *Appendices A, B, C & D.*)

The following is a list of projects, measures, and contributing factors implemented in 2024 that contributed to the GHG emissions reduction:

- Continuous Optimization[2] (C-Op) projects were investigated at 10 sites (implementation is underway):
    - Currie Elementary,
    - DeBeck Elementary,
    - Garden City Elementary,
    - Grauer Elementary,
    - Ferris Elementary,
    - Homma Elementary,
    - Kingswood Elementary,
    - Maple Lane Elementary,
    - McKay Elementary, and
    - Steves Elementary.
- Boiler replacement projects with high-efficiency condensing boilers at Boyd Secondaryand Kilgour Elementary Schools (578.16 GJ natural gas saved.)
- Domestic Hot Water Heater replacement project at Brighouse Elementary School (~100GJ natural gas saved.)
- Direct Digital Control (DDC) upgrades at Errington, Kingswood, McNeely, Talmey, and Thompson Elementary Schools (energy saving numbers are under calculation.)
- Energy-saving behavioural campaign on thermal comfort to reduce natural gas consumption in 20 schools (15 Elementary and 5 Secondary.) SD38 intends to rerun the campaign in 2025 to improve school understanding.

[2] Continuous Optimization is a process that improves the efficiency of major energy systems like HVAC by identifying and implementing low-cost operational fixes through retro-commissioning or recommissioning—without requiring major capital upgrades.

- LED upgrades at Blundell Elementary, Brighouse Elementary, and Palmer Secondary (285,269 kWh electricity saved).
- 8 Dual Fuel Rooftop Units (RTUs) Replacement at Rideau Park IT Service Centre (2,030 GJ natural gas saved.)

2024 Building Energy and GHG Emission Performance Analysis:

- Natural gas consumption and GHG emissions declined significantly, primarily due to upgrades to Direct Digital Control (DDC) systems and the replacement of HVAC equipment with high-efficiency models. There was 2,215 GJ of natural gas saved in 2024. Besides, Fortis' missing data at MacNeill Secondary contributed to the reduction, as the school reported zero natural gas usage (0 GJ) for several months in 2024 on FortisBC's website (Figures in *Appendix E*).

  SD38 communicated with FortisBC to address the missing data. SD38 emphasized the importance of resolving the issue by providing Prior Year Adjustment (PYA) data for uploading to the Carbon and Greenhouse Gas Reporting Tool (CGRT). FortisBC responded that the missing data would be back-calculated and reflected in the 2025 dataset. As indicated in the FortisBC portal, natural gas consumption for the first half of 2025 (January to April) is significantly higher compared to historical data from 2023 (Figures in *Appendix E*), suggesting the inclusion of the previously unreported usage. As a result, the 2025 report is expected to show increased natural gas consumption and GHG emissions to account for the earlier data gap.

- Regarding propane consumption: SD38 utilizes propane-fired HVAC equipment only for the existing portable classrooms. All newly purchased portable classrooms will plan to be equipped with electric heat pumps to lower GHG emissions. Moreover, fluctuations in propane prices have been a factor in SD38's efforts to reduce its reliance on propane as an energy source.

- Regarding diesel consumption for buildings: SD38 refuels backup generators with diesel on a demand basis. In 2024, several sites required refuelling, resulting in a slight increase in diesel purchases compared to 2023.

- Regarding electricity consumption, there was an increase of 65,395kWh in electricity consumption at District sites in 2024 due to the electrification projects such as RTUs dual fuel replacement at Rideau Park, numerous portable classrooms relocations, modular additions, and new daycare facilities, including:

    - Cook Elementary, Modular classroom additions,
    - Brighouse Elementary, Modular classroom additions,
    - Whiteside Elementary, Daycare facilities,
    - McKinney Elementary, Daycare facilities,

    - Mitchell Education Centre, Daycare facilities,
    - Bridge Elementary, Daycare facilities
    - Anderson Elementary, Portable classrooms additions,
    - Talmey Elementary, Portable classroom additions, and
    - Tomsett Elementary, Portable classroom additions.

- All portable classrooms, modular additions, and daycare facilities are connected to the main building's electricity supply. Most of the thermal demand in the new additions is provided by heat pumps, unlike the portable classrooms which are heated by propane-fired equipment. The total occupied floor area of the District slightly increased by 0.5% from 276,038 m^2 in 2023 to 277,530 m^2 in 2024 (Figures in *Appendix F*.) There was also a mass replacement of Dual Fuel RTUs at Rideau Park Technology Resource Centre (fuel switched from natural gas to electricity.)

- In fact, the carbon emissions of electricity dropped from 160 tCO_2e in 2023 to 141 tCO_2e in 2024 due to the change in emission factor for electricity purchased from BC Hydro in the 2024 reporting year. SD38 has also completed a series of strategic measures mentioned above (e.g., DDC upgrades, LED upgrades, etc.) to conserve electricity consumption. As well, there will be electricity savings from implementing those 10 C-op projects mentioned above.

Looking ahead, the following factors will be considered, as they are expected to increase utility usage and consumption across SD38 sites and buildings:

- According to the Metro Vancouver Regional Growth Strategy (Metro 2050), the population of Richmond is projected to increase from 224,380 in 2020 to approximately 298,000 by 2050. The City of Richmond has established a plan consistent with the Metro 2050, adopting the City Centre Area Plan (CCAP) in 2009. Given the rapid housing and population growth in Richmond, SD38 anticipates an increase in student enrollment in the foreseeable future, particularly for City Centre Schools, including Brighouse, Cook, Talmey, and Tomsett Elementary (Figures in *Appendix G*). For more information, please see the SD38 Long-Range Facilities Plan.

- SD38 has developed a Long-Range Facilities Plan to accommodate this anticipated growth in student enrollment. This strategy includes portable classrooms, regional combinations of school additions, and new school construction. Talmey and Tomsett Elementary Schools have already planned classroom additions, which are currently under construction and scheduled for completion in 2025. Tomsett Elementary will have its electricity service capacity upgraded to accommodate the new classroom additions.

- SD38 foresees a continuous increase in energy consumption in the coming years due to the potential growth in student population and total school floor area. Despite this expected rise in energy demand, SD38 will incorporate strategic plans to reduce carbon emissions.

B. Mobile Sources - Fleet

The use of fossil fuels to power the District's fleet vehicles, including maintenance vehicles and school buses, contribute to fleet emissions. The fleet accounted for 5% of the District's overall emissions in 2024 (Figures *in Appendix A*.)

In order to reduce the fleet emissions, there is a two-pronged approach:

- Behavioural – providing training and planning resources to all employees that drive District vehicles on route planning and economic driving techniques.
- Technical – as existing vehicles reach a point where maintenance cost is greater than the cost of replacement, they will be retired in favour of electric vehicles where feasible or with a more fuel-efficient version.

In 2024, Richmond School District acquired 4 gasoline pickup trucks. Mobile emissions increased from 425 tCO2e in 2023 to 436 of tCO2e in 2024 (Figures in *Appendix H*). Due to higher student enrolment from 22,772 in 2023 to 23,307 in 2024 (a 2.35% increase), there is a corresponding increase in school bus services (Figures in *Appendix F*). Moreover, there is an increase in operational use of school facilities due to the larger student population, which led to an increase in repair and maintenance services supported by our ground vehicles (Figures in *Appendix F*).

There was also a higher usage of SD38 owned fleet vehicles in 2024, as Facilities Services was able to fill a number of vacancies.

Although we have seen an increase in GHG emissions, the Richmond School District has achieved an increase in our Corporate Average Fuel Economy of 32%[3] compared to the baseline through the retirement of less fuel-efficient vehicles.

C. Paper Consumption

Office Paper Supplies emissions are indirect and originate from the District's use of office paper. In 2024, paper supplies usage accounted for 4% of the District's overall GHG emissions, a slight increase from 247 tCO2e in 2023 to 249 tCO2e in 2024 (Figures in *Appendix I.*) Similar to Mobile Sources, the higher number of students has increased the quantity of paper used in the District in 2024 (Figures in *Appendix F*). The actions taken to reduce paper consumption have included communicating benchmarked data to schools, greater use of electronic means to provide information to students and staff, and defaulting printers to double-sided printing.

[3] The Corporate Average Fuel Economy is determined based on linear regression analysis, incorporating the growth of the student population.

D. Fugitive Emissions

As mentioned, SD38 tracked fugitive emissions for the first time in 2024. Fugitive emissions accounted for 179 tCO_2e, approximately 3% of the total emissions (Figures in *Appendix A*.) SD38 tracked the refrigeration system for the provincial Food Infrastructure Program and space conditioning equipment across over 50 sites using the estimation method.

SD38 employed the estimation method outlined in the "*2024 B.C. Best Practices – Methodology for Quantifying Greenhouse Gas Emissions.*" This approach involved identifying the number, type, and size of all applicable equipment (e.g., small to large stand-alone medium- to low-temperature refrigeration systems, commercial air conditioning (AC) systems, heat pumps, etc.) for estimation purposes.

An inventory was developed using data from the VFA[4] asset list and SD38 internal Asset Planner system. The number of refrigerant-running units was then entered into the "*HFC Calculator*" provided by the Climate Action Secretariat of the B.C. Ministry of Energy and Climate Solutions, which applies preset GHG emission factors to generate estimates.

E. Plans to Continue Reducing Greenhouse Gas Emissions

In 2025, we are continuing with the District's comprehensive energy conservation program and have a number of energy efficiency projects slated for 2024/25 including:

- Boiler upgrade projects to high-efficiency condensing boilers at Richmond Secondary.
- We will continue to explore energy savings opportunities from C-Op projects. The sites selected for investigation in 2025 will be determined shortly.
- Direct Digital Control (DDC) upgrades at Palmer Secondary, Steveston-London Secondary, and Sea Island.
- LED lighting upgrade at 3 sites: Garden City, Quilchena Elementary, and Boyd Secondary.
- Rooftop Units (RTU) replacement project to Dual Fuel RTUs at Kingswood Elementary.
- The EV infrastructure upgrade at the Facilities Services Centre with the support of the federal Zero Emission Transit Fund (ZETF) (50%) and the EV Fleet Ready program (50% upon the completion of a fleet electrification and infrastructure upgrade study. The delivery of 2 new electric school buses in summer 2025.

[4] Software that the provincial government uses for building condition assessments.

F. Potential increase in energy demand

- Modular Classroom Addition: Talmey Elementary (6 classrooms) and Tomsett Elementary (9 classrooms with an upgrade to its electricity service capacity)
- Two Modular Daycare Facilities: Garden City and Spul'u'Kwuks Elementary
- New School Construction: Diefenbaker Elementary (school replacement for the old Diefenbaker Elementary at the nearby site)
- Two new schools are proposed in the city centre area in the next 5 years based on the SD38 Long-Range Facilities Plan, and subject to the Ministry of Infrastructure supporting and funding these projects.

2024 GHG EMISSIONS AND OFFSETS SUMMARY TABLE

Richmond School District 38's 2024 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2024	
Total $BioCO_2$	*35.2*
Total Emissions (tCO_2e)	*5,954*[5]
Total Offsets (tCO_2e)	*5,764*
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO_2e)	*0*
Grand Total Offsets for the 2024 Reporting Year	
Grand Total Offsets to be Retired for 2024 Reporting Year (tCO_2e)	*5,764*
Offset Investment ($)	*$ 144,100*

RETIREMENT OF OFFSETS:

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, School District 38 (Richmond) (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2024 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Energy and Climate Solutions (**the Ministry**) ensuring that these offsets are retired on the Organization's behalf, the Organization will pay within 30 days, the associated invoice to be issued by the Ministry in an amount equal to $25 per tonne of offsets retired on its behalf plus GST.

[5] 5,919 (Total emission including leased properties) + 35.2 ($BioCO_2$)

PART 2. Public Sector Leadership

2A. CLIMATE RISK MANAGEMENT

In March 2019, Richmond City Council declared a climate emergency in response to the urgent call set out by the United Nations' Intergovernmental Panel on Climate Change (IPCC), joining more than 600 cities across the world that have made similar declarations. The City has set the target of reducing GHG emissions in Richmond by 50% by 2030, and net-zero GHG emissions by 2050[6].

In 2021, SD38 added a Climate Action pillar to our sustainability strategy to emphasize the importance of taking bold and swift action to do our part to mitigate the impacts of climate change. We will do this by reducing our emissions, operating low-carbon, efficient and climate-resilient facilities and schools, and outlining the operational and engagement changes we need to take to meet our climate goals.

We also acknowledge the climate emergency and will develop climate adaptation plans to identify how SD38 can mitigate our climate risks and enhance the resiliency of our facilities and operations. In our schools, climate action also needs to be understood as a social justice issue since climate change will impact marginalized populations the most.

Under BC's Carbon Neutral Government Regulation, SD38 is required to track, report and offset greenhouse gas (GHG) emissions each year. As the majority of our emissions come from using natural gas to heat District buildings, reducing building-related emissions is our major priority. Fleet emissions represent a smaller portion of our emissions and are addressed through our Sustainable Transportation Strategy. With the provincial carbon tax scheduled to rise in $25 per year increments until 2030, reducing our carbon emissions will not only help us mitigate our climate impact but will also result in cost savings for the District.

The impact of climate change increases the following risks for Richmond residents:

- More severe and more frequent flooding
- Increased demand for City drainage and sewage systems
- Loss of critical shoreline ecosystems
- Increased health risks caused by exposure to wildfire smoke
- Increased risk of heat stress and heat stroke
- Increased frequency and severity of summertime water restrictions
- Increased likelihood of wildfires

- *Information via the City of Richmond*

[6] https://www.richmond.ca/sustainability/climate/climateleadership.htm

We also aim to provide educational opportunities to staff, educators, and students on climate change and how to take action on climate change, incorporating these important concepts into the curriculum and staff training opportunities.

In 2023, the District conducted Climate Change Risk Assessments at three (3) sites in the District. Using the localized climate change projections through 2050, each facility was evaluated for actions to improve resiliency, service continuity, and embedding climate change into the Long Range Facilities Plan and District policies and regulations.

2B. OTHER SUSTAINABILITY INITIATIVES

The Richmond School District continues to create and support the necessary structures for an integrated, system-wide approach to environmental sustainability through the work of the **Richmond Sustainability Advisory Committee (RSAC)**, comprised of representatives from all stakeholder groups.

- The **RSAC** is a District advisory group made up of stakeholders from across the organization, including students, parents, educators, senior leadership and District staff.
- **Eco Cafés**: These meetings are meant to showcase the good work that Green and Eco Teams do with respect to sustainability and provide opportunities for schools to connect with each other in order to foster additional collaboration.

Meeting quarterly, the Energy and Sustainability Team reports on SD38's progress on its sustainability and climate action goals and solicits feedback on other initiatives that should be considered. Through our 'Eco-Wise' program, we continue to work towards embedding environmental stewardship in the day-to-day operations of the District and to incorporate Environmental Stewardship into the school curriculum and into the delivery of each employee's core mandates. The last RSAC meeting was held in November 2023.

The last Eco Café was held in February 2025 and featured the efforts of Richmond Secondary and Ferris Elementary and their Miyawaki Pocket Forest updates. Of note was the use of a variety of plant and tree species that was informed by First Nations perspectives, as well as species that are indigenous in Oregon state. It was also fascinating to learn about the current work at Grauer Elementary and McNair Secondary. This is to account for a changing climate and the anticipated increase in average temperatures over the next 30 years.

Inspired by the Environmental Stewardship Policy and guided by the DSCAP, multiple sustainability initiatives led by teachers and students have been implemented at schools:

1. **School-based Green and Eco Teams**: through the annual Eco-Wise grants funded by the Energy and Sustainability team, schools would undertake ownership of various sustainability initiatives. A number of activities are undertaken by school-based Green and Eco Teams, including:

- *Outdoor Learning Space upkeep*: recently presented to the Facilities and Buildings Committee, this is an initiative to work with school Green and Eco teams to teach them how to maintain these spaces, especially when the teacher who initiated them moves to another school. The intent is to provide continuity of approach culture across schools in maintaining these spaces, as teachers move around, and students graduate.
- *Energy Wise Network activities*: as part of the Eco-Wise grants, Green and Eco Teams were asked to help with behaviour change campaigns that focus on energy conservation. The Energy-Wise Network is a program, jointly funded by BC Hydro and Fortis BC, that works with participating organizations to promote sustainable behaviours. Activities include: Holiday shutdowns (unplugging devices), BuRrrDay (sweater days when we lower the temperature in a school, in coordination with the HVAC team), Litter-less Lunches, and "Dining in the Dark" (turning out the lights).

2. **Green Ambassadors Program**: run in conjunction with the City of Richmond, Green Ambassadors are volunteers who work at large community events to help the community appropriately sort their waste at these events. It has since morphed into a monthly meeting that is part training, part students presenting on various sustainability topics of interest each month. We present a District update and answer questions students may have about all things sustainability that the District is doing.

3. **Zero Waste Strategy**: We have been implementing a full waste management program comprising District-wide organics and recyclables collection in our schools and administrative buildings.

    - Paper towel is now collected like other organic wastes, all are being separated and diverted from the landfill to become 'class A' compost in all of our facilities.
    - Refundable beverage container collection programs for schools were widely implemented as well.
    - There is a pilot program of "Superfy waste monitoring meters" inside the bins of 3 sites: Facilities Service Centre, School Board Office, and Technology Services Centre. To collect data on the volume of waste generation over time and to provide benchmarking of waste data for different sites.
    - Waste audit at 8 schools (Brighouse Elementary, Errington Elementary, Ferris Elementary, Steves Elementary, Tomsett Elementary, Cambie Secondary, MacNeil Secondary, and Richmond Secondary) and 3 sites (Facilities Services Centre, Rideau Park Technology Resource Centre, and School Board Office.) Waste audits have provided detailed insights into the waste management situation at various schools and sites. SD38 is currently reviewing all the reports and planning for follow-up and tailored actions.

- The Friendlier reusable food container pilot program was implemented at Burnett and Cambie Secondary Schools. Friendlier eliminates single-use packaging by providing reusable containers to students and staff who purchase food at the cafeteria during lunch. SD38 received positive feedback from school administrators and students. SD38 is currently reviewing all data regarding the rate of food container reuse and the overall waste diversion rate at the schools. After evaluating the technical results and establishing a sustainable financial model for the food providers at the cafeterias and the schools, SD38 is proceeding with the opportunity to expand the program to the cafeterias of all 10 secondary schools.

4. **Utility Management**: We have Prism Utility Monitoring & Analysis Software (PUMA), a web-based utility monitoring software that provides actionable insights for energy, water and greenhouse gas management across a large portfolio of 54 buildings in our District.

   Internal benchmarked energy, paper, and water consumption data have been shared with staff and students to engage them in reducing carbon and water footprint.

2C. SUCCESS STORIES

Behavioural change program

"Plug Load Pirates" Campaign Part 2: The District continued to run the "Plug Load Pirates" campaign in 2024, with only two schools participating.

Due to the low participation rate, SD38 transitioned to the "BuRrr Day" campaign to enhance the effectiveness of the behavioural change efforts.

"BuRrr Day" Campaign: To enhance energy awareness regarding thermal comfort in students' daily lives, SD38 organized a "*Sweater Day*"-type campaign featuring a friendly school-wide competition. The class with the most students participating by wearing themed sweaters, or the class that decorates themed sweater posters and receives the highest votes (as voted by teachers and students) will win a celebration party with free food. SD38 also conducted pre- and post-campaign surveys alongside the actual behavioural change program.

Before the BuRrr Day campaign, only 38% of students indicated they would "*wear extra layers of clothes*" when feeling cold. After the campaign, this figure increased to 47%. This result demonstrated that the behavioural change program is an ongoing effort. It also provides a valuable opportunity to promote "*Student Leadership*" and "*Student Learning and Engagement*," which are key pillars of the SD38 District Sustainability and Climate Action Plan, encouraging steps towards sustainable action.

Low Carbon Retrofit of Building Systems

In 2024, SD38 worked on various work and studies to implement carbon emissions reduction across the District.

New School Construction: The new Diefenbaker Elementary School construction project is currently at the 70% design stage. SD38 has incorporated electrically powered indoor thermal heating with a natural gas backup. The new Diefenbaker Elementary is expected to be significantly greener than the old Diefenbaker Elementary School.

In addition, SD38 is collaborating with BC Hydro to explore opportunities to enhance the energy performance of the new school beyond current building code requirements. This initiative aims to reduce energy consumption and contribute to overall improvements in the District's energy performance. The exploration will consider both financial and technical feasibility.

Dual Fuel Rooftop Units (RTUs): The installation of 8 Dual Fuel RTUs at Rideau Park Technology Resource Centre has demonstrated significant energy conservation. Data from July 2024 to March 2025, the first 9 months of the Dual Fuel RTUs' operation, shows a 73.3% reduction in natural gas consumption at Rideau Park. Moreover, the total energy consumption (electricity and natural gas) has decreased by 23.26% during the same period due to the high-efficiency electricity-powered heating, despite the switch from natural gas to electricity for thermal comfort. SD38 is pleased with these ongoing results and plans to introduce Dual Fuel RTU replacements at Kingswood Elementary School.

Building Envelope Upgrade: Damage to the building envelope had been identified at Blair Elementary and repaired/replaced as part of the Building Envelope Program funding. When the contractors removed the old stucco envelope, they discovered corrosion of the insulation barrier caused by water damage. The contractors replaced the insulation material aligned with the Building Code standard. Data from July 2024 to March 2025, the first 9 months after the building envelope upgrade, shows a 23.03% reduction in natural gas consumption at Blair.

This non-mechanical upgrade highlighted the aging condition of several schools, some of which are over 50 years old. It underscores the need to improve building envelopes to reduce heat loss rather than relying solely on repeated mechanical system upgrades.

Given the demonstrated financial and sustainability benefits of the Blair Elementary envelope upgrade, it is worth reconsidering how resources are allocated between mechanical and non-mechanical projects in the future. Only two sites were designated for building envelope restoration or window replacements, compared to eight sites receiving mechanical upgrades. There is a strong case for broadening investment in envelope improvements to support long-term energy efficiency.

With continued support from the Climate Action Secretariat and the Ministry of Energy and Climate Solutions, SD38 is well-positioned to explore further opportunities for building envelope and other non-mechanical upgrades as part of a more balanced and forward-looking capital planning strategy.

2D.CONCLUSION

The Richmond School District continues its efforts to reduce greenhouse gas emissions in keeping with our Strategic Plan. As noted in our District Sustainability and Climate Action Plan, this is an effort that will continue until we have achieved our climate action goals. We are proud of our work to reduce our greenhouse gas emissions to pre-pandemic levels, but recognize further efforts are needed. In collaboration with our District stakeholders and community partners, we look forward to overcoming the challenges ahead.

Executive Sign-off:

[redacted]

Signature

June 17, 2025

Date

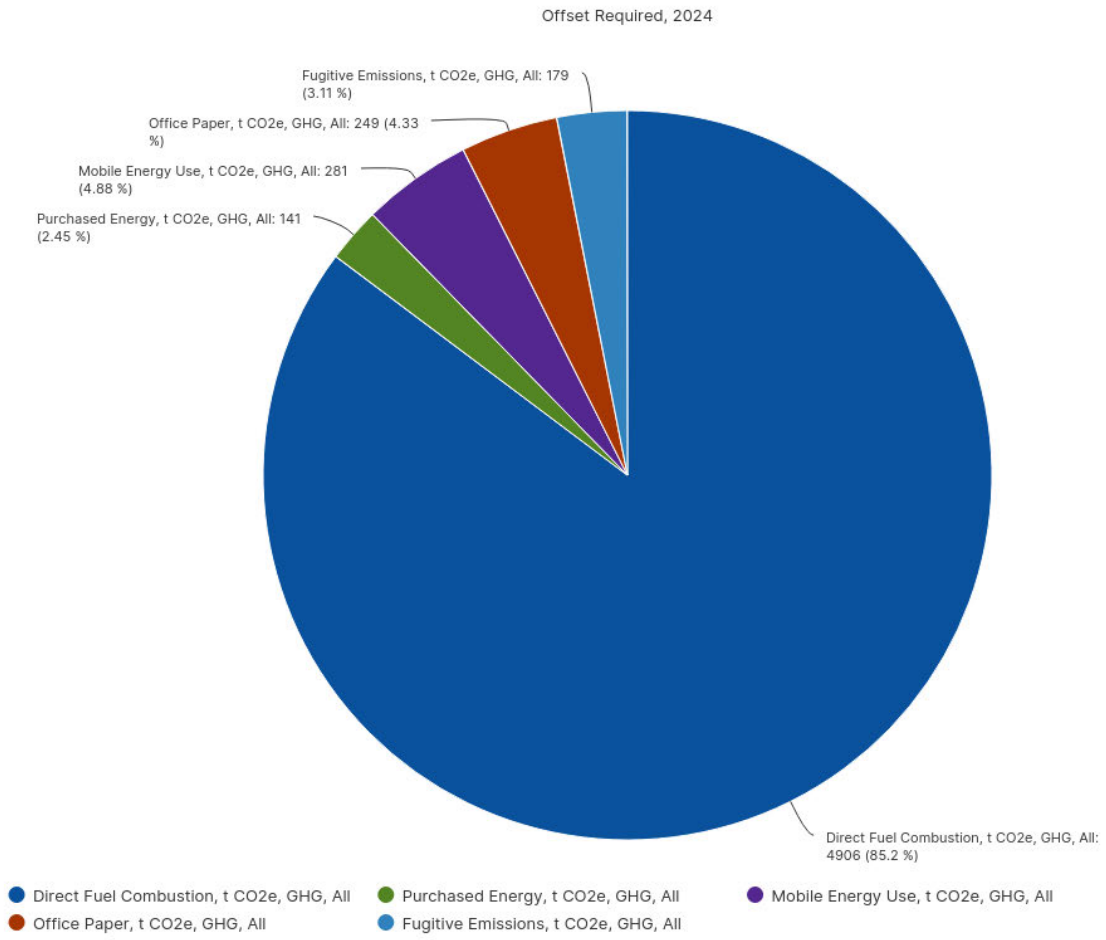
Cindy Wang

Name (please print)

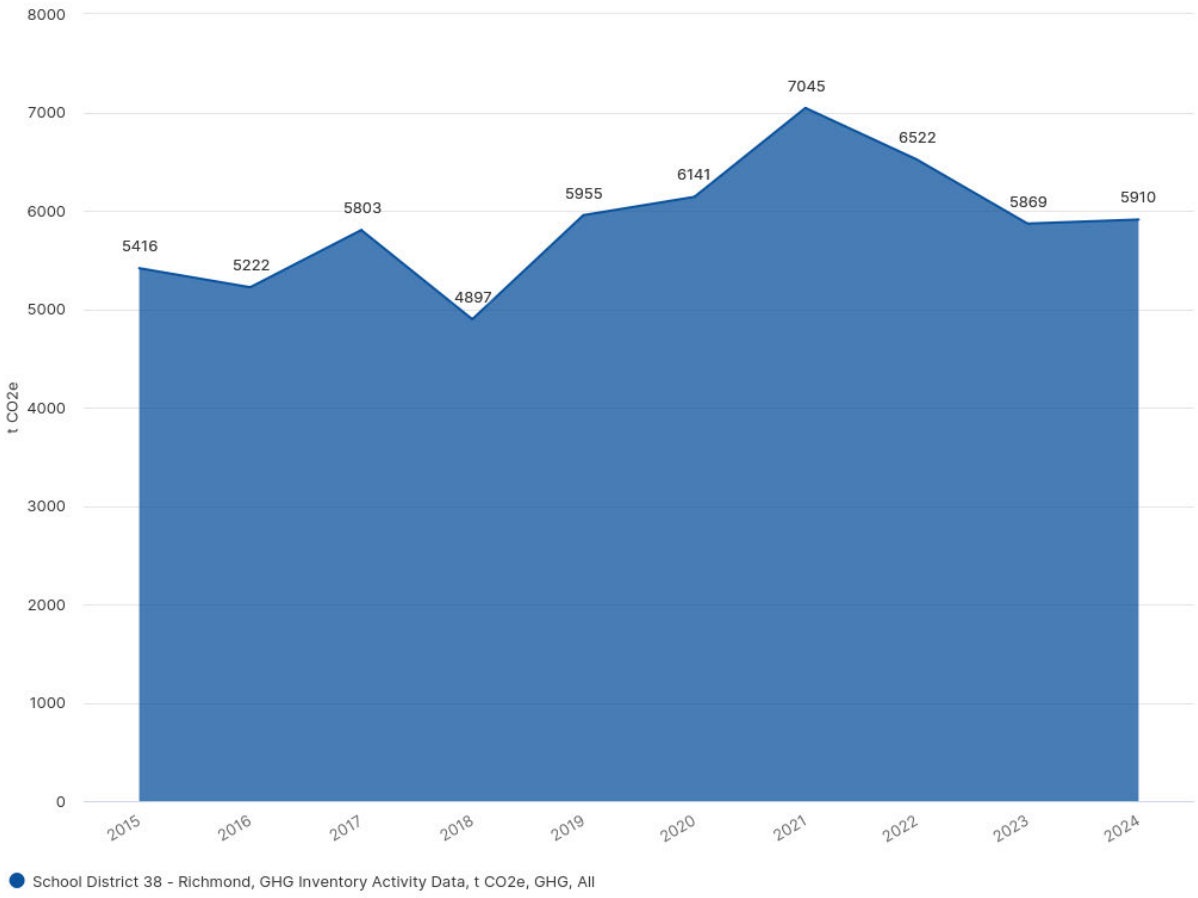
Secretary Treasurer

Title

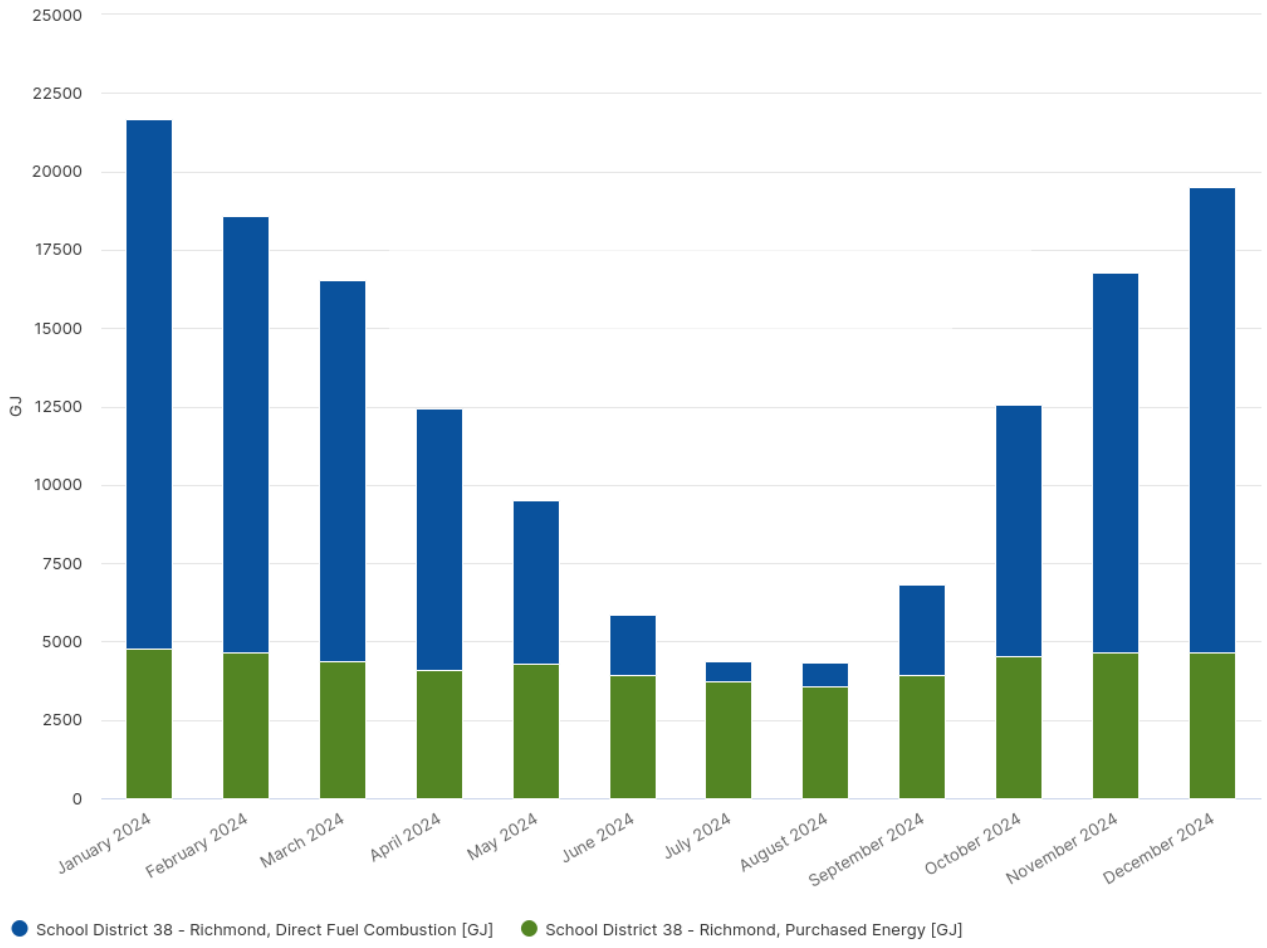
Appendix A: GHG Emissions Offset required in 2024



Appendix B: GHG Emissions Trend

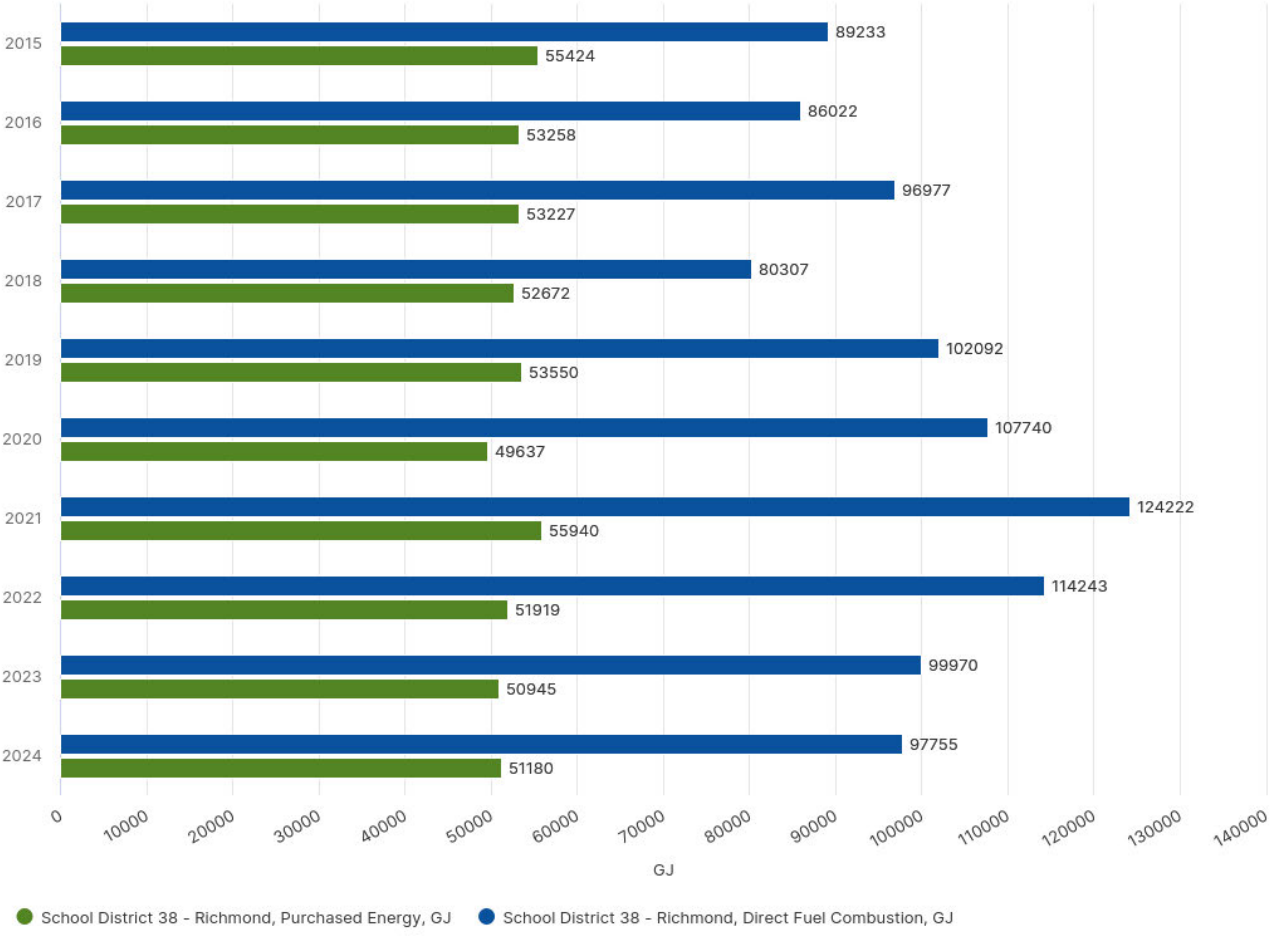


Appendix C: Stationary Energy Use by Month, 2024

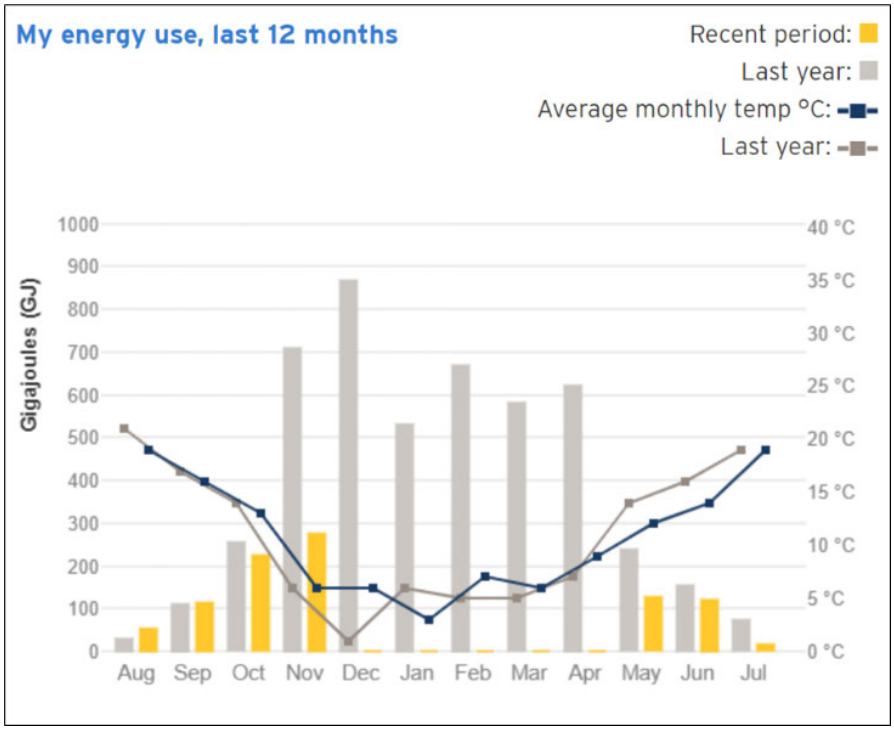


Direct fuel combustion includes natural gas, propane, and diesel consumption; purchased energy includes electricity consumption.

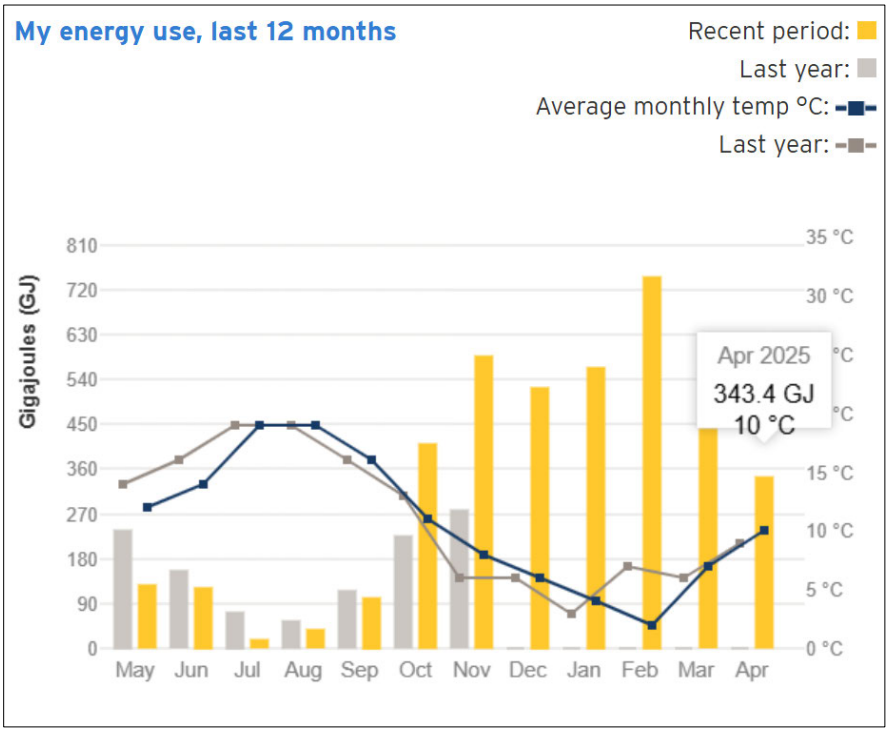
Appendix D: Station Energy Use Trend



Appendix E: FortisBC Natural Gas Consumption Record – Missing Data From December to April

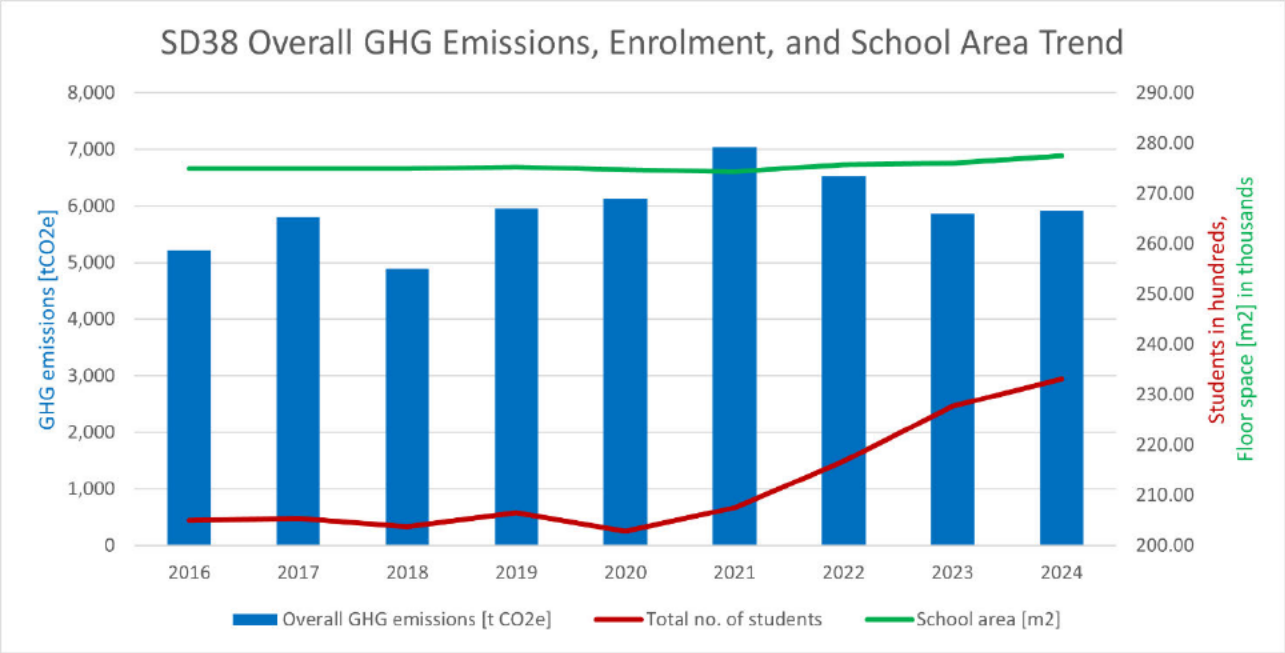


FortisBC Natural Gas consumption record - MacNeill Secondary School 2023/24



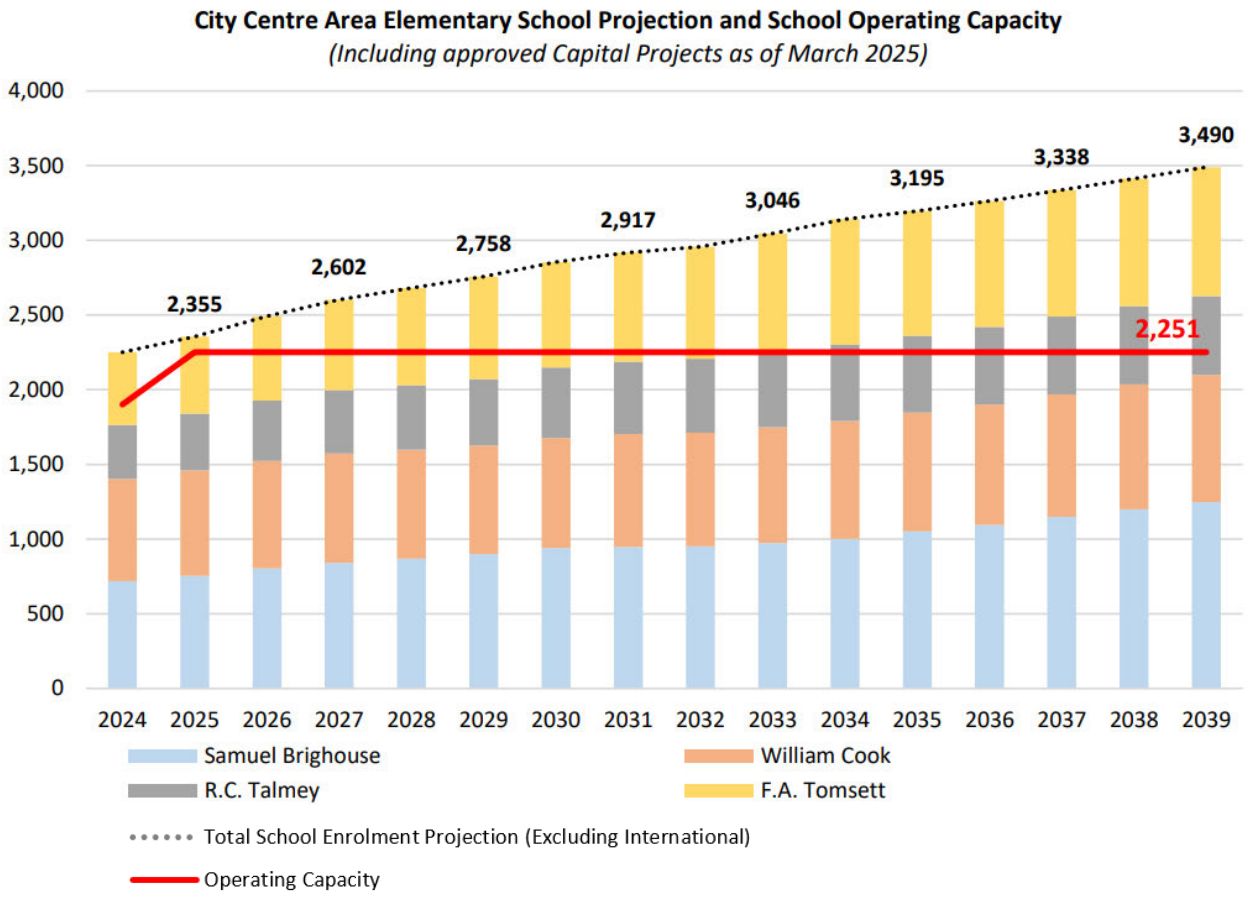
FortisBC Natural Gas consumption record - MacNeill Secondary School 2024/25

Appendix F: SD38 Overall GHG Emissions, Enrolment, and School Area Trend

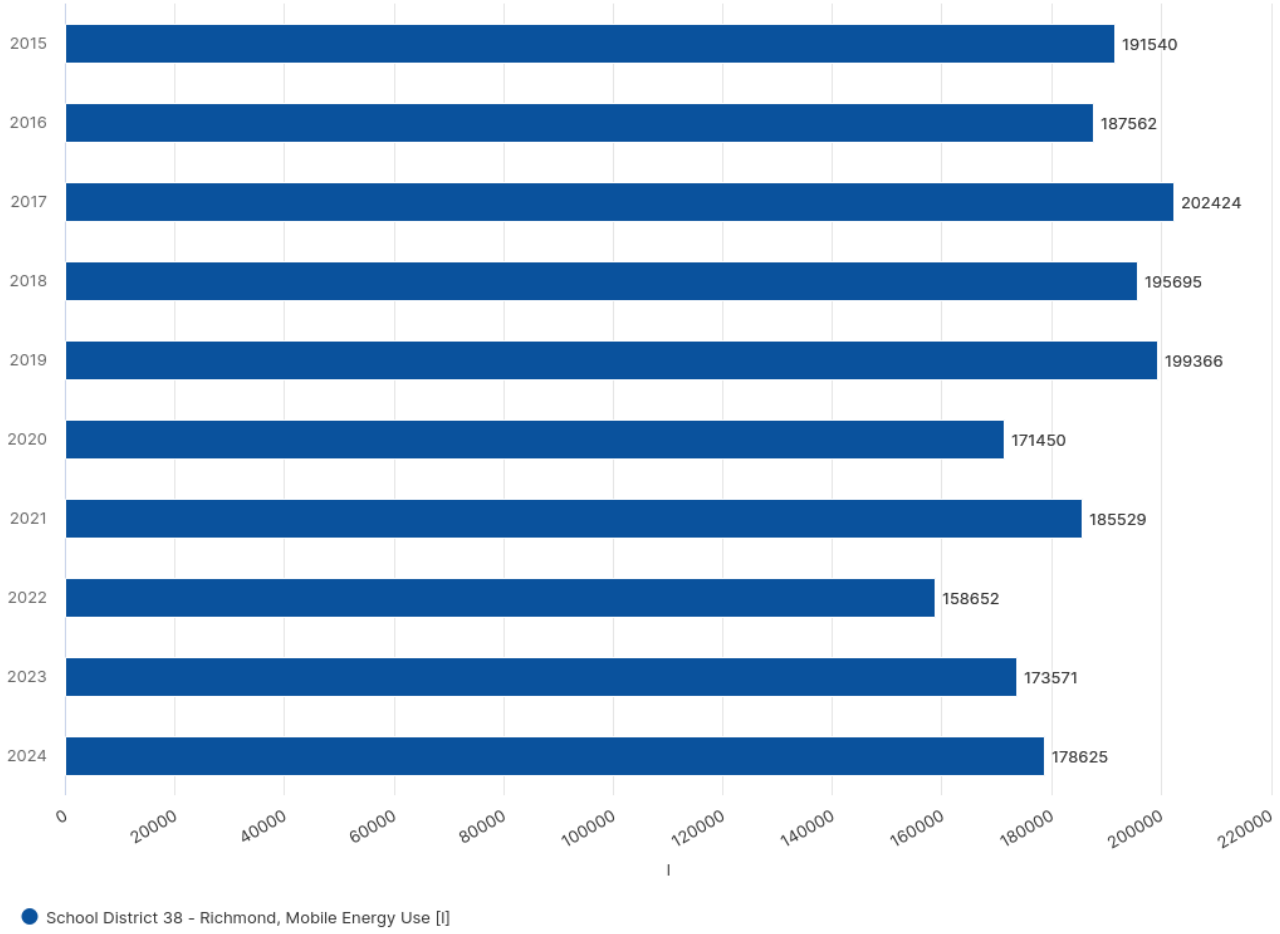


	2016	2017	2018	2019	2020	2021	2022	2023	2024
Overall GHG [t CO2e]	5,222.1	5,803.4	4,897.0	5,954.9	6,140.6	7,044.7	6,522.4	5,869.2	5,918.7
Total # of students	20,493	20,536	20,377	20,645	20,280	20,750	21,678	22,772	23,307
School Area [m²]	274,971.6	274,971.6	274,971.6	275,241.8	274,751.2	274,335.2	275,770.2	276,037.6	277,529.8

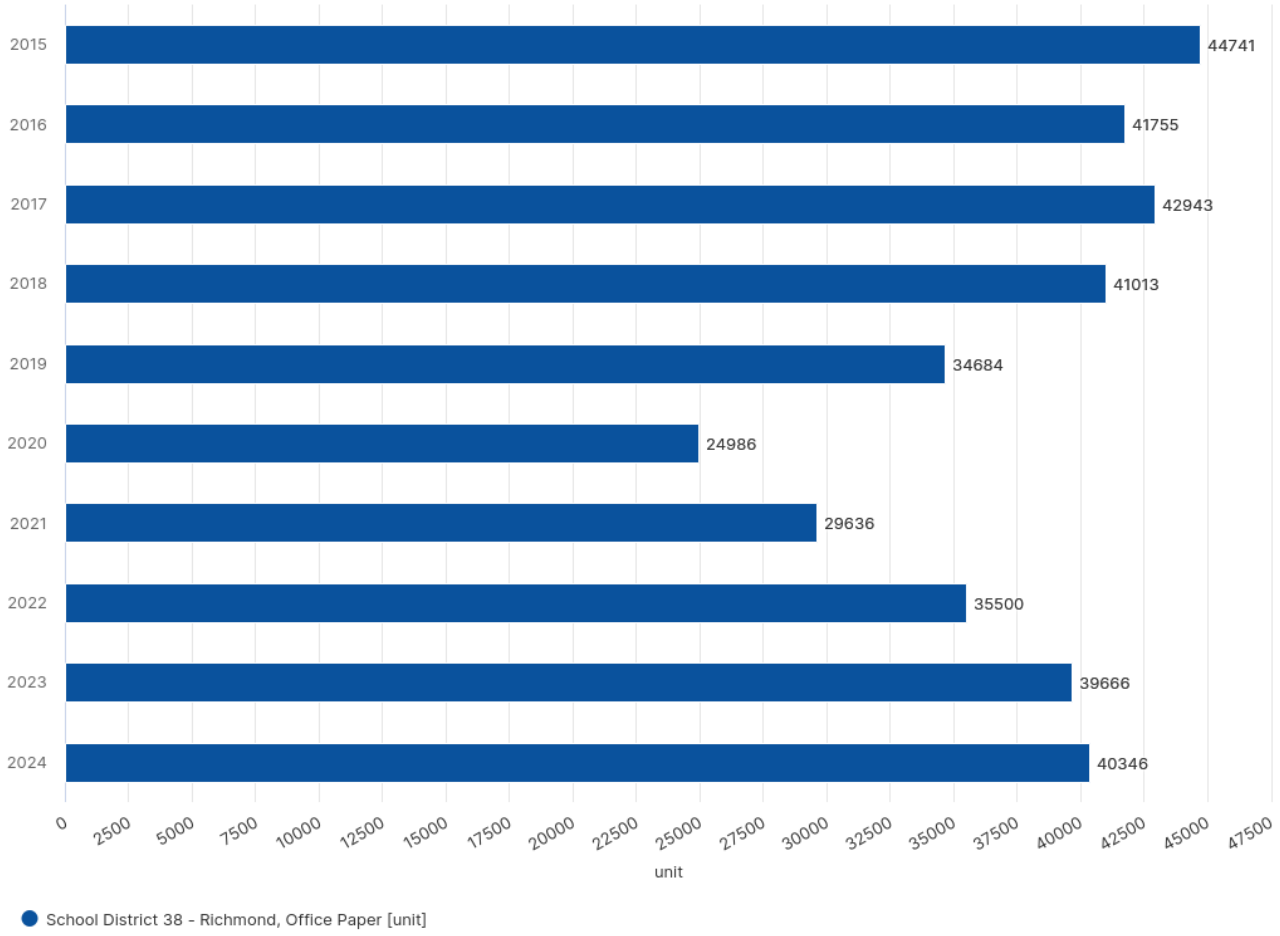
Appendix G: City Centre Area Elementary School



Appendix H: Mobile Energy Use Trend



Appendix I: Office Paper Use Trend



P.S.: 1 unit = 500-sheet (20lb) all-color paper package in size of 8.5” x 11”, 8.5” x 14”, and 11” x 17”, made by wood fiber and non-wood fiber sources including wheat, eucalyptus, sugarcane, and bamboo