



2021 PSO Climate Change Accountability Report

School District 38
(Richmond)

PART 1. Legislative Reporting Requirements

DECLARATION STATEMENT:

This PSO Climate Change Accountability Report for the period January 1, 2021 to December 31, 2021 summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2021 to reduce our GHG emissions, and our plans to continue reducing emissions in 2022 and beyond.

By June 30, 2022, School District 38's final 2021 *Climate Change Accountability Report* will be posted to our website at www.sd38.bc.ca.

EMISSION REDUCTIONS: ACTIONS & PLANS

At its Public Meeting of 15 December 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 40% reduction from mobile sources, by 2030 and net zero GHG emissions by 2050.

The DSCAP is part of the District's [2020-2025 Strategic Plan](#).

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

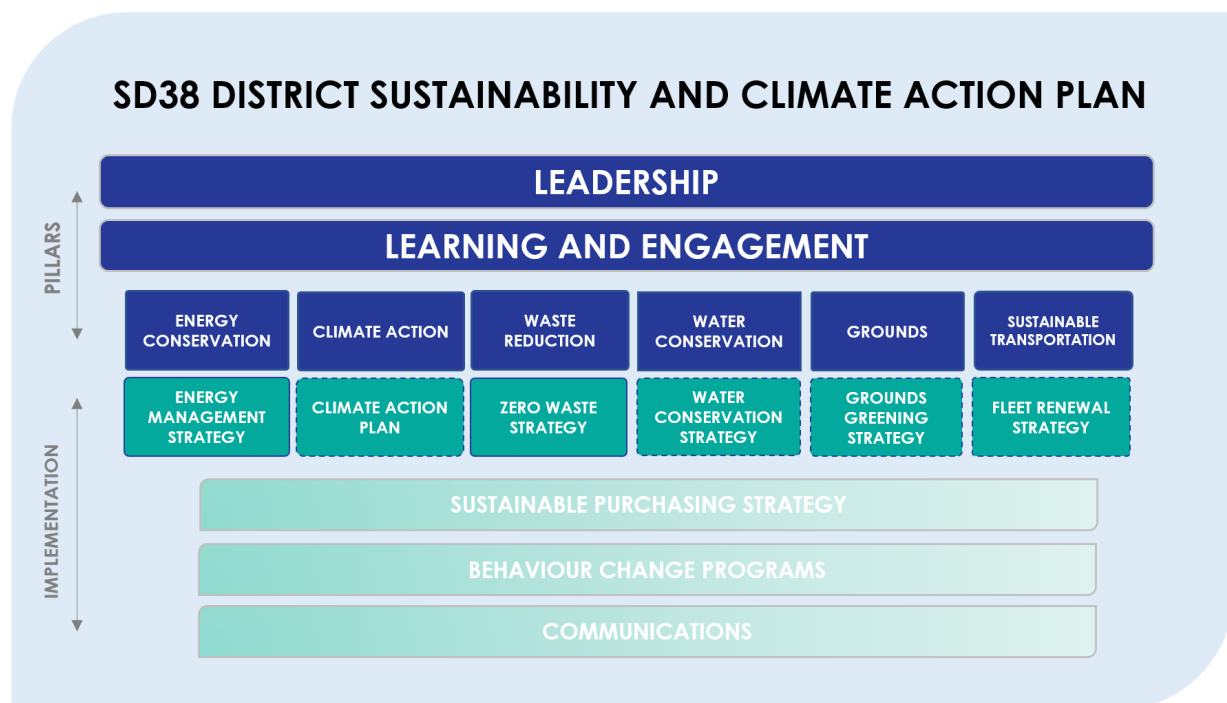
- I. Develop and implement a five-year Sustainability and Climate Action Plan.
- II. Improve the energy efficiency, climate resiliency and sustainability of all facilities through capital improvements.
- III. Implement sustainable practices and programs to improve waste diversion rates, reduce waste 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](#)



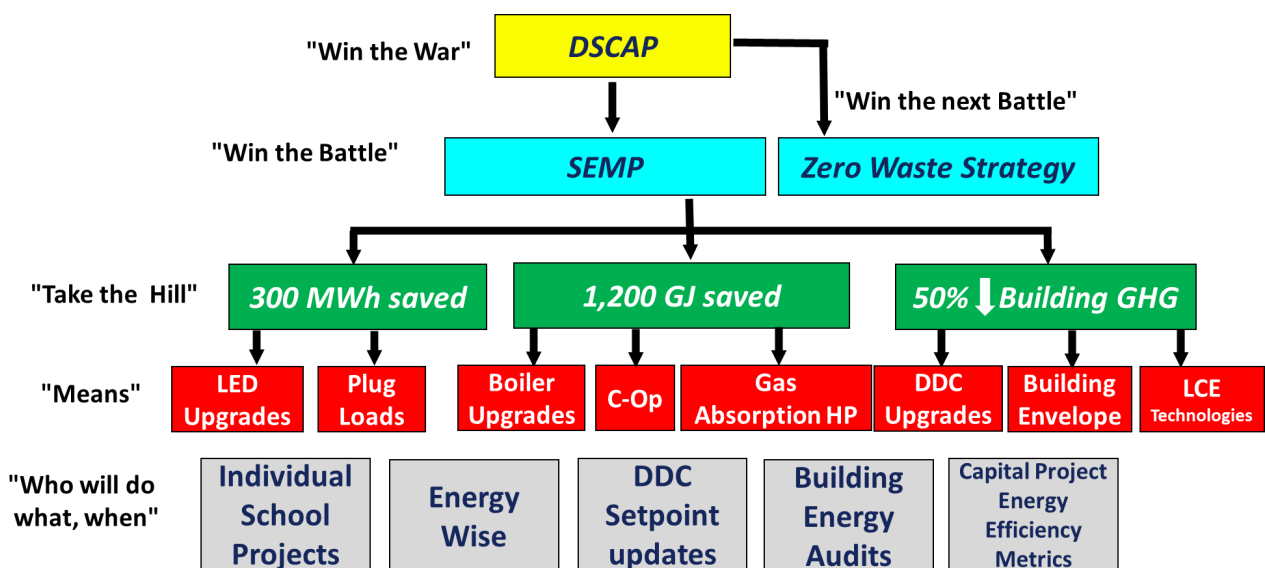
How the pillars interact is shown in the following:



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



How will we get there? Here is a graph showing how our Strategic Energy Management Plan (SEMP) will be contributing in to the implementation of DSCAP and reduction of GHG emissions.



In 2021, as part of our Energy Conservation pillar under our DSCAP, the District achieved significant savings in electricity and natural gas, and subsequently reduced GHG emissions. More details in the following sections.

A. Stationary Sources - Buildings

In 2021, we maintained the focus of our greenhouse gas (GHG) reduction initiatives on reducing our footprint from our largest emissions source: our buildings. The Richmond School District has a robust energy management program with aggressive targets and a forward-looking plan to reduce energy consumed in our buildings. However, natural gas consumption in 2021 was higher than in previous years due to increased ventilation requirements in response to Covid-19.

GHG emissions from buildings result from the fossil fuels consumed to provide heating to schools and other district facilities. These emissions account for the vast majority of the District's overall emissions at 93.3% in 2021.

Our carbon neutral objectives and GHG reduction endeavours are inextricably linked to our environmental stewardship initiatives. Of the nine DSCAP pillars, Energy Conservation presents the greatest opportunity for both GHG reductions and financial savings given that the largest proportion of the District's GHG emissions is from energy use in buildings. Thus, the largest proportion of our GHG reduction initiatives focus on energy conservation within our schools and administrative facilities. In 2021:

- Implemented 4 boiler replacement projects to high efficiency condensing boilers at Sea Island, DeBeck, Diefenbaker and McNeely Elementary
- Conducted rooftop unit replacements at McNair, Maple Lane, Palmer, and Quilchena
- Implemented pneumatic control conversions to Direct Digital Control (DDC) at 6 elementary schools: DeBeck, Diefenbaker, Garden City, General Currie, Grauer, and Wowk.
- Implemented Continuous Optimization (C-Op) programs at 6 sites: Burnett, Cambie, McMath, McNeill, McRoberts, and Brighthouse
- LED lighting upgraded at Richmond Secondary, Steveston-London Secondary, Westwind Elementary, Hamilton Elementary, and School Board Office. As of 2021, there were 16 facilities upgraded to LED lighting systems: 6 secondary schools, 8 elementary schools and 2 operation buildings (Board Office and Facilities Services Centre)
- Lighting systems connected to alarm panels so that all interior lighting can be automatically turned off when building security system is armed.
- Conducted a thermal comfort behavioral campaign to reduce natural gas consumption in 6 pilot buildings: Palmer, Steveston-London (2 secondary schools), Anderson, Ferris, Kingswood, and Woodward (4 elementary schools).

In total, there were 1,124,000 kWh of electricity and 8,431 GJ of natural gas saved, far beyond the annual targets of 300,000 kWh/year of electricity and 1,200 GJ/year of natural gas.

- 897,000 kWh and 5,067 GJ from the Continuous Optimization project (6 sites)
- 168,000 kWh from the Steveston-London LED upgrade and 59,000 kWh from SBO LED upgrade (in progress)
- 1,505 GJ from the pneumatic conversions to DDC (6 sites)
- 1,403 GJ from the IBC boiler upgrades (4 sites)
- 294 GJ from the McMath Solar Wall (previously-installed)
- 162 GJ from the pilot thermal comfort behavioral campaign (6 sites)

As a result, 420 tonnes CO₂ equivalent were reduced, and \$10,512 were saved in avoided carbon offset costs.

B. Mobile Sources - Fleet

The use of fossil fuels used to power the District's fleet vehicles, including maintenance vehicles and school busses, results directly in emissions. The fleet accounted for 4.1% of the District's overall emissions in 2021.

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. It is believed that this can achieve up to 27% of the required 40% reduction in GHG emissions.
- Technical – as existing vehicles reach a point where maintenance costs become greater than the cost of replacement, they will be retired in favour of electric vehicles where feasible, or with a more fuel efficient version of the same.

In 2021, through the Association of School Transportation Services of BC, and through the provincial Bus Acquisition Program, that Richmond School District was purchasing two Type C electric buses from Western Canada Bus, to replace two diesel Type D buses. Delivery is expected in the summer of 2022.

Considering the significant lack of commercial-duty vehicles with electric variants, Richmond School District is working with [Blue Dot Motorworks](#) on installing retrofit plug-in hybrid systems on our "white fleet". Currently in alpha development, the intent is that these plug-in hybrid systems would provide up to 60 km of electric range on a single charge, after which drivers would switch to the internal combustion engine power train. Given the constrained geographic footprint of the Richmond School District and limited highway driving, a retrofit plug-in hybrid system has the potential to eliminate up to 60% of our fuel use, with a corresponding GHG emission reduction. Delivery of two beta units is expected by December 2022.

Along with the purchase of these two Type C buses, the District has upgraded the electrical service at our Facilities Services Centre to support future expansion of the electrified yellow and white fleets.

C. Paper Consumption

Supplies emissions are indirect, originating from the District's use of office paper. In 2021, supplies accounted for 2.6% of the District's overall GHG emissions. Some of 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.

D. COVID-19 Impacts on Energy and GHG Performance

During the pandemic, the Richmond School District has focused on ASHRAE recommendations for ventilation as a means to mitigate transmission of respiratory viruses our schools. The District is taking concrete steps to ensure that our students and staff come to school and work each day in a clean, healthy and safe work environment. Over \$2.1 million has been spent or committed to HVAC system improvements in Richmond schools in 2021.

The Richmond School District is fully compliant with all school ventilation requirements. The District works closely with, and takes direction from, public health officials to ensure that heating, ventilation, and air conditioning (HVAC) systems are designed, operated and maintained per Provincial standards and specifications:

- Mechanical ventilation systems are in excellent working order through scheduled filter changes and equipment maintenance.
- Extended operating hours for ventilation systems – initiating ventilation systems well before school starts each day to flush the air in all rooms prior to occupancy.
- Increased fresh air exchange in accordance with Provincial guidelines.

Because of these enhanced ventilation efforts, energy consumption has increased relative to previous historic levels, and GHG emissions has also been increased as a result.

	Projected data (school year)			Actual data (school year)		
	<i>Percentage</i>	<i>Consumption</i>	<i>Cost</i>	<i>Percentage</i>	<i>Consumption</i>	<i>Cost</i>
Natural gas	23%	25,384 GJ	\$219,042	15%	15,520 GJ	\$336,533
Electricity	18%	2,589,431 kWh	\$283,855	5%	735,625 kWh	\$47,423
			\$502,897			\$383,956
GHG (building only)	26%			15%		

While the cost of electricity has remained relatively constant in the last 2 years, natural gas costs have increased by almost 20%, from \$8.7/GJ to \$10.4/GJ. This explains why natural gas consumption increase was lower than projected, but the actual natural gas cost is higher.

Based on the above, an additional budget \$500,000 per year is needed to meet the COVID-19 enhanced ventilation requirements, and an annual increase of 15% in building GHG emissions are expected until the ASHRAE-recommended ventilation requirements return to pre-pandemic levels. In fact, GHG emissions in 2021 has increased 14% in comparison with GHG emissions in 2019 (6,347 tonnes of CO₂ in 2021 vs 5,548 tonnes of CO₂ in 2019 from all buildings).

E. Plans to continue reducing Greenhouse Gas Emissions

In 2022, we are continuing with the District's comprehensive energy conservation program and have a number of energy efficiency projects slated for 2022/23 including:

- Implementation of Continuous Optimization programs at 10 sites: Boyd, McNair, Palmer, Richmond, Steveston-London (5 secondary schools), Byng, Kidd, McNeely, Talmey (4 elementary schools), and the Facilities Services Centre (FSC)
- LED lighting upgrade at 4 sites: McMath Secondary, Ferris, Mitchell and Steves Elementary
- Implementation of pneumatic control conversions to Direct Digital Control (DDC) at Byng Elementary and McRoberts Secondary
- Boiler replacements to high efficiency condensing boilers at Hamilton and Byng Elementary
- Rooftop unit replacements at McRoberts Secondary
- Continue to execute regular duct and HVAC coil cleaning at various sites
- Updated 2022 ASHRAE guidance on ventilation recommendations means a reduction in the flushing requirements in buildings to a single pre-occupancy period (instead of both pre- and post-occupancy that was recommended early in the pandemic).

2021 GHG EMISSIONS AND OFFSETS SUMMARY TABLE

School District 38's 2021 GHG Emissions and Offsets Summary	
GHG Emissions created in Calendar Year 2021	
Total Emissions (tCO ₂ e)	7,024
Total BioCO ₂	16.76
Total Offsets (tCO ₂ e)	6,822
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	26
Grand Total Offsets for the 2021 Reporting Year	
Grand Total Offsets (tCO ₂ e) to be Retired for 2021 Reporting Year	6,848
Offset Investment (\$25 per tCO ₂ e)	\$171,200

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 2021 calendar year, together with any adjustments reported for past calendar years (if applicable). The Organization hereby agrees that, in exchange for the Ministry of Environment and Climate Change Strategy (**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.

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 2050¹.

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 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

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

- More severe and more frequent flooding
- Increased demand on 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 City of Richmond*

¹ <https://www.richmond.ca/sustainability/climate/climateleadership.htm>

emissions will not only help us mitigate our climate impact but will also result in cost savings for the District.

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 into staff training opportunities.

In 2021, the District had the Climate Change Risk Assessment conducted for the Board Office, Talmey Elementary, and McNair Secondary. 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. Building on this model, we plan to conduct Climate Change Risk Assessment at 8 additional buildings in 2022.

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 Action Team (RSAT)** and the **Richmond Sustainability Advisory Committee (RSAC)**, comprised of representatives from all stakeholder groups.

- The **RSAT** is composed of the District's educational and business managers who implement the environmental stewardship policy and program. The RSAT reports to the Executive Team and the Board of Education on all pillars of the Eco-Wise Program.
- The **RSAC** is a district advisory group made up of stakeholders from across the organization, including students, parents, educators, senior leadership and district staff.

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.

One of the initiatives that came out of RSAC consultation was a focus on Zero Waste, which is what led to the Zero Waste Strategy that is part of the DSCAP. Another was the recent refresh of signage at our waste sorting stations that we recently rolled out, based on feedback from students at Steveston-London.

Given the pandemic and especially with the omicron wave, there was no RSAC meeting organized in 2021 but it is expected a RSAC meeting to be hold in late September 2022.

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

School-based Green and Eco teams: through the annual Eco-Wise grants funding 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, works with participating organizations to promote sustainable behaviours. Activities include: Holiday shutdowns (unplugging devices), BRR Days (sweater days when we lower the temperature in a school, in coordination with the HVAC team), Litter-less Lunches, and “Dining in the Dark” (turn out the lights).

As mentioned earlier, the pilot Thermal Comfort campaign was conducted in 2021/22 that involved building occupants to help us out with how our schools can take more ownership of their thermal comfort during “shoulder season”. This is the 3-week period it takes our HVAC team to start up all the boilers that provide heating the schools in mid-September through October, and the corresponding late-May to end of June period to shut them down for the summer. In 2022/23, we plan to engage Green and Eco teams to disseminate this campaign widely in the District.

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.

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 program for schools were widely implemented as well.

Waste Audits: pre-pandemic, students would be part of the waste audit process, but we have partnered with Recycling Alternative to conduct waste audits at our school, with reports being sent back to Green and Eco teams, Administrators, and team sponsor teachers. We have conducted audits at 5 elementary schools and 2 secondary schools as of late 2021, and plan to conduct more audits each quarter.

In-Class Waste Diversion program: we are still working out the details with CUPE to have a 5-bin in-class sorting system (Garbage, Paper, Blue Bin recycling, Organics, and refundables) to get towards our waste diversion targets. This program was developed as a direct result of Diefenbaker getting the results of their audit. The program would have custodians responsible only for the garbage and paper in each classroom (as they currently do), while students would take the remaining bins and empty them at the end of the day into the hallway sorters present at each school.

Eco-Wise Cafes: this is more student-driven, and pre-pandemic this would be done quarterly with more of a focus on having student groups present to other schools on initiatives in which they are undertaking. Not all schools would attend each quarter (we would set up a rotation schedule on who presents when), but the goal is that all schools present once a year. Each Eco-Wise Cafe would have mostly elementary schools with a “sprinkling” of secondary schools attend. The idea is that each school would help inspire creativity when presenting to each other. No event was held in 2021 but it is expected Eco-Wise Cafes to be back again in late October/November 2022.

Utilities Management: We have Prism Utility Monitoring & Analysis Software (PUMA), a web-based utility monitoring software that provides actionable insights for energy, water and greenhouse gases 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 to reduce carbon and water footprint.

In addition, we have built close relationships with a wide range of external stakeholders, including City of Richmond, Fortis BC, BC Hydro, BC Green Games, Science World, Tree Canada, David Suzuki Foundation, Hub Cycling, and Translink to promote environmental education programs in our district.

2C. SUCCESS STORIES

The success pilot Thermal Comfort Campaign

In the summer 2021, the District was awarded up to \$6,770 from FortisBC for the development of a new thermal comfort campaign to reduce natural gas consumption in 6 pilot buildings. The fund was used to develop the campaign materials and communication plan, and leverage on this success to expand the program across the district. This is in addition to the hours available through the Energy-Wise Network program offering.

The District signed an agreement with Prism Engineering as the campaign consultant. The goals of the campaign are to:

- Improve thermal comfort awareness and reduce unnecessary building set point temperature adjustments
- Identify possible technical challenges of the building control systems and tackle these issues
- Reduce natural gas consumptions at 6 participating schools

Main scopes of work performed by Prism Engineering include: (1). Data Analysis (to identify technical and behavioural issues); (2). Materials Development; (3). Campaign Development; (4). Stakeholder Engagement; (5). Measurement; and (6). Pilot Review and Program Expansion.

6 pilot buildings have been identified and selected by the Energy Specialist, in consultation with the Manager, Energy & Sustainability and Prism Engineering, they are:

- Secondary schools: Steveston-London, Palmer
- Elementary schools: Anderson, Ferris, Kingswood, Woodward

The campaign was kicked-off with an email sending to the administrators of 6 schools to officially informed them about the campaign, and consult with them about the campaign materials and messages.

Despite having some initial concerns regarding the enhanced ventilation requirements and the ongoing Covid-19 pandemic, the campaign received full supports from all administrators.

After several rounds of consultation with the administrators, HVAC team and the Communication team, and getting the branding approval from FortisBC, we were able to have the official campaign materials as shown below, which include:

- [Fun Facts](#): Learn how our school's heating and cooling system works
- [Top Tips](#): Easy things you can do if you're too hot or cold
- [FAQs](#) and how to report an issue

Building temperature awareness

Help save energy and the environment

5 facts about how our schools are heated or cooled

1. Heating our school buildings accounts for 90% of SD38's greenhouse gas emissions
2. Temperature in our schools is controlled by zone
3. If you see a thermostat, this refers to the temperature of the zone, not necessarily your room
4. Temperatures are automatically set to industry standards
5. If you are still too hot or cold, read our FAQs for tips and learn how to report issues

Did you know? Turning up the temperature by one degree Celsius results in 2% extra energy use and emissions!

sd38.bc.ca FORTIS BC Energy at work RICHMOND SCHOOL DISTRICT NO. 38

Building temperature awareness

Help save energy and the environment

Too hot or too cold? Try these tips!

- Wear layers**
✓ Wear a warm sweater if you're too cold
- Adjust blinds**
✓ Close blinds in hot weather
✓ Open blinds in cold weather
- Close doors**
✓ Keep doors closed when heating/cooling is turned on
- Drink a warm or cold beverage**
✓ Helps you warm up or cool down

sd38.bc.ca FORTIS BC Energy at work RICHMOND SCHOOL DISTRICT NO. 38

Building temperature awareness

Help save energy and the environment

Frequently asked questions (2 of 2)

- Can I adjust the thermostat?**
Some schools have thermostats, which are now used to control zones within a building rather than an individual zone. If you see the thermostat is set above 23 degrees C, please change it to below 22 degrees C if you can adjust the thermostat.
- What can I do if my building is still too hot or cold?**
Consider if this is a persistent issue. If it is a particularly hot or cold day, the building systems may take a bit longer to catch up with seasonal temperature fluctuations. If the issue is ongoing, you can report an issue directly to your administrators.
- How can I report an issue?**
If your building is not working the way it typically does, let us know via your administrators. Only administrators are able to submit service requests to the Facilities Services Team. When placing a service request, please have the following information available:
 - What is your exact location (building and room number)
 - Are you feeling too hot or too cold?
 - What is the temperature at the nearest thermostat?
 - How large is the affected area?
 - What type of space is affected?
 - How long has this been going on?

Our facilities team will work hard to solve major problems. But we also need you to do your part!

sd38.bc.ca FORTIS BC Energy at work RICHMOND SCHOOL DISTRICT NO. 38

Building temperature awareness

Help save energy and the environment

Frequently asked questions (1 of 2)

- What environmental impact does heating and cooling buildings have?**
Heating our schools with natural gas accounts for approximately 90% of our greenhouse gas emissions, further contributing to climate change. SD38 has committed to reducing our emissions and energy use to reduce our environmental impact.
- How are building temperatures controlled?**
SD38 buildings are controlled and automated to provide efficient and safe operating temperatures for building users, according to occupant comfort guidelines and ASHRAE industry standards. Building temperatures are controlled by zones within schools. Temperature setpoints are reduced overnight when the building is unoccupied to save energy.
- What can I do if I'm too hot or cold?**
How we feel regarding temperature is very personal. Where you sit, what clothing you wear, and what time of day it is can all change the way the number on the thermostat feels to you. Some people might feel hot while others feel cold. If you're too hot or cold, try these tips:
 - Wear layers of clothing
 - Adjust blinds: keep closed in hot weather and open in cold weather
 - Close doors when heating/cooling is turned on
 - Drink a warm or cold beverage
- What can I do if I'm too cold early in the mornings?**
The heating system is activated during school days early in the morning. If you're too cold if you arrive early in the morning, the heating system may just need a bit of time to kick in. Try wearing a sweater instead of placing a work order request.

sd38.bc.ca FORTIS BC Energy at work RICHMOND SCHOOL DISTRICT NO. 38

We posted these materials on our website and at the same time, sent them to the administrators of 6 pilot schools for distribution and placement on their buildings' common areas.

50% greenhouse gas emissions reduction by 2030 and net zero operations by 2050.

Board Approves Updated Long Range Facilities Plan

At its Public Meeting of November 24th, the Richmond Board of Education unanimously approved the 2021 update to its Long Range Facilities Plan (LRFP). The LRFP is a Board-driven document that:

- outlines facilities management strategies in support of long term accommodation of projected students and educational programs, and
- places the need for capital projects in a district-wide context and plays a key role in the submission of

The Climate Change Projections Summary is an assessment of potential risks and vulnerabilities due to climate change and extreme weather events for three exemplar district facilities.

Building Temperature Awareness Campaign!

SD38 is launching a Building Temperature Awareness Campaign to raise awareness about how our schools are heated and cooled and what you can do if you are too hot or cold.

Heating our schools accounts for approximately 90% of the District's greenhouse gas emissions, which affect climate change. Keeping the temperature at an efficient temperature can help keep building occupants comfortable, help the environment and save money.

Notice your building is too hot or cold? Read these tips to learn (*click on links for posters*):

- **Fun Facts:** Learn how our school's heating and cooling system works
- **Top Tips:** Easy things you can do if you're too hot or cold
- **FAQs** and how to report an issue

Our facilities team will work hard to solve technical problems. But we also need you to do your part!

We ran 6 thermal comfort educational workshops at 6 schools from November 2021 to February 2022, coinciding with District Professional Development Days and staff meetings to raise thermal comfort awareness of building occupants and how their behavior change in thermal comfort may reduce unnecessary building set point temperature adjustments. We provided 5 facts about how our schools are heated or cooled, tips to improve thermal comfort, and frequently asked questions. The audiences of these workshops highly appreciated the information, and they committed to reviewing and changing their behaviours toward sustainability.

After 5 months of the campaign, a noticeable amount of natural gas savings were recodered as below:

	Versus 3-year average	Versus last year
Average savings at 6 schools (%)	-3.5%	-8.4%
Average savings at 6 schools (GJ)	27	111
Total savings at 6 schools (GJ)	162	667

Conservatively, this campaign was helped to save 3.5% of natural gas, which is equivalent to 162 GJ. This amount is enough to heat a typical elementary school in one and a half months.

Total participants of this campaign at 6 schools were 4,380 people, including 4,130 students and 250 educators.

With the above positive impacts, this campaign was recognized by FortisBC as the **Best Behavioural Campaign in BC in 2021/22** during the *FortisBC's Energy Specialist Spring Workshop* in May 2021.

Executive Sign-off:

Cindy WANG

May 27, 2022

Signature

Date

Cindy Wang

Secretary Treasurer

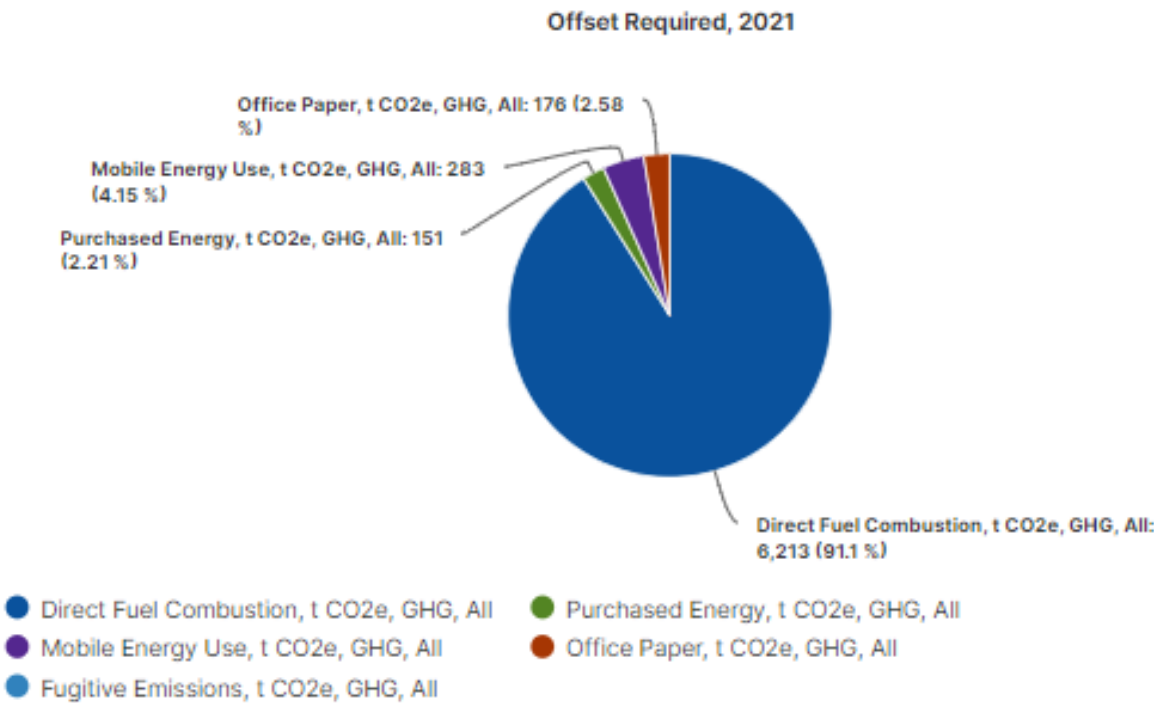
Name (please print)

Title

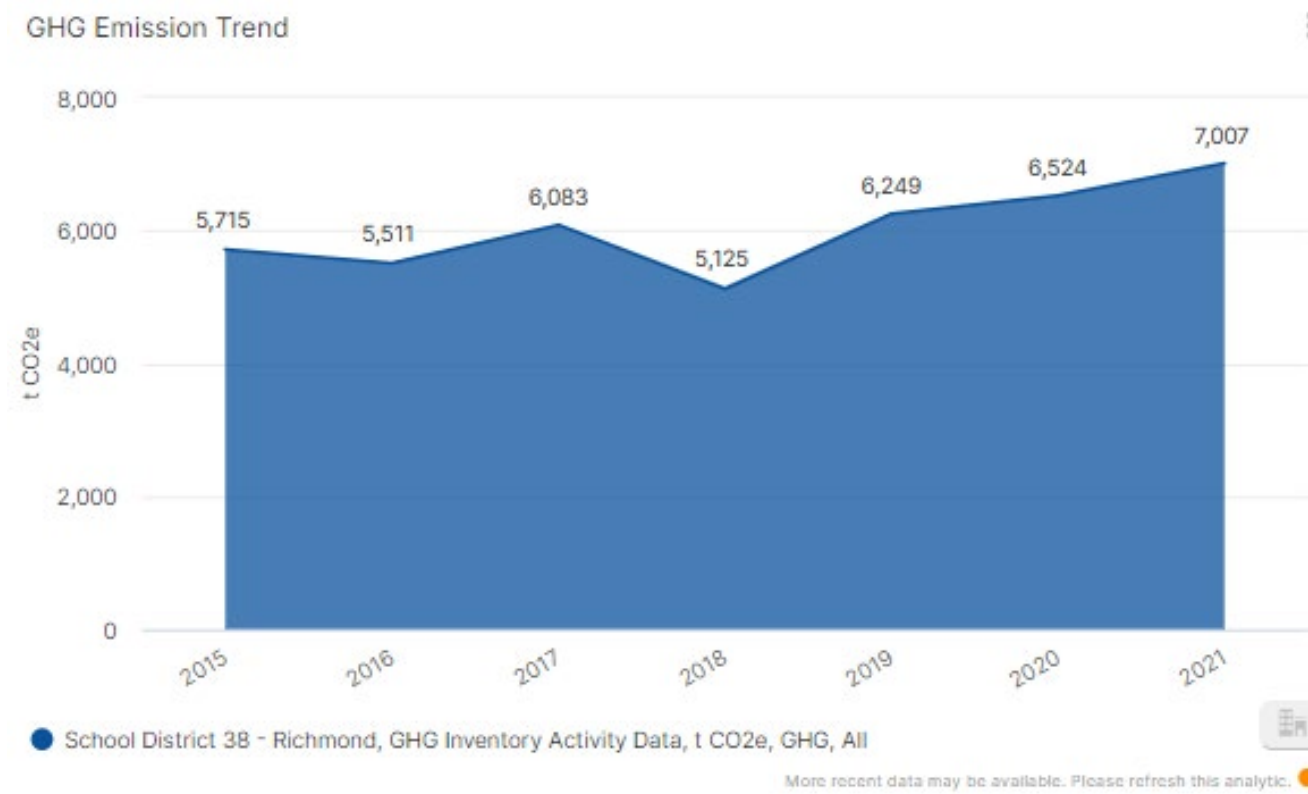
[Please email your signed, completed report to Carbon.Neutral@gov.bc.ca by no later than May 31, 2022.]

Appendix A: GHG Emissions offset required in 2021

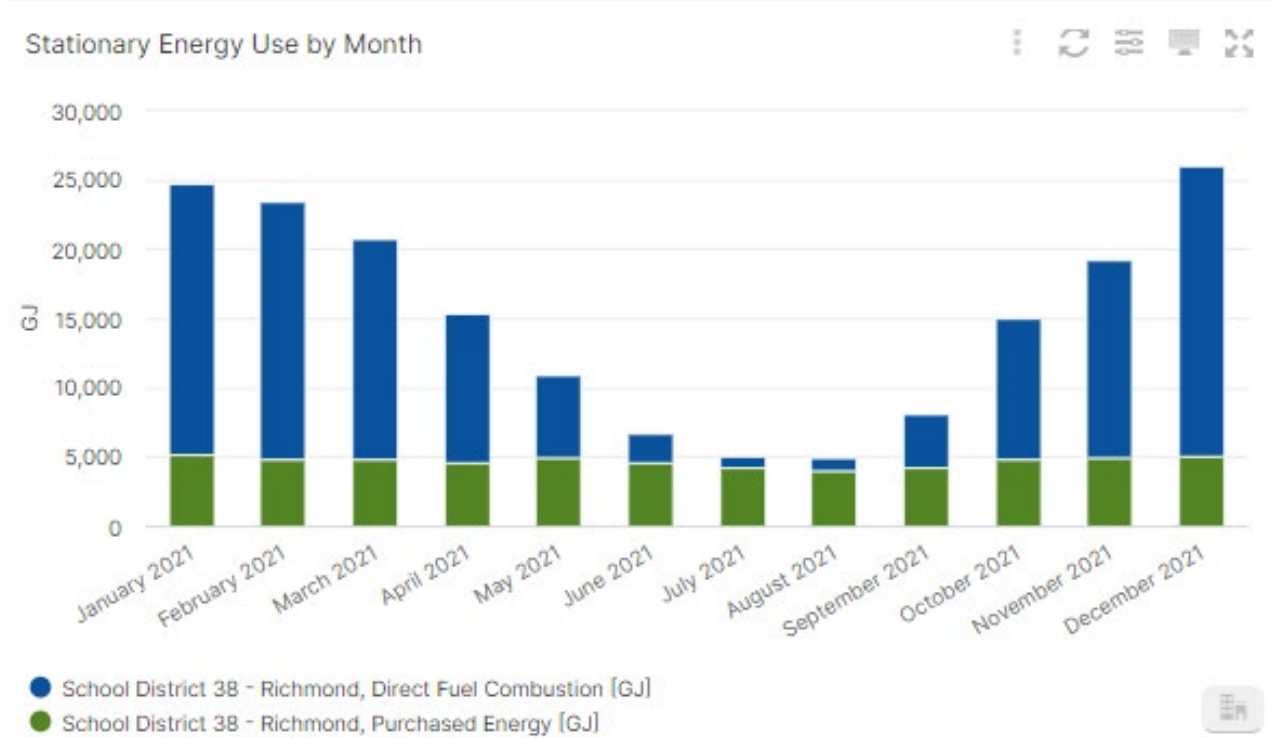
Offset Required GHG Emissions by Activity Data Source (no Biogenic)



Appendix B: GHG Emissions Trend



Appendix B: Stationary Energy Use by Month, 2021



Appendix C: Station Energy Use Trend, 2021

Stationary Energy Use Trend

