BOARD OF EDUCATION
BURNABY
SCHOOL DISTRICT 41

2023 CLIMATE CHANGE ACCOUNTABILITY REPORT

APRIL 2024

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LAND ACKNOWLEDGEMENT

Burnaby is on Coast Salish territory in the traditional, ancestral, and unceded lands of the xʷməθkʷəy̓əm (Musqueam), Sḵwx̱wú7mesh Exhume (Squamish), and səl̓ilwətaʔɬ (Tsleil-Waututh) Nations, where we teach, learn, and live.

DECLARATION STATEMENT

DECLARATION STATEMENT: This PSO Climate Change Accountability Report for the period January 1, 2023, to December 31, 2023 summarizes Burnaby School District #41's greenhouse gas (GHG) emissions profile, the total offsets to achieve carbon neutrality for 2023 and the initiatives we have taken in 2023 to minimize our GHG emissions, and our plans to continue reducing emissions in 2024 and beyond.

OVERVIEW

On behalf of Burnaby School District #41, we are pleased to present our Climate Change Accountability Report for the year 2023. This report highlights our ongoing commitment to enhance energy efficiency. Spanning over a decade long journey towards sustainability, this report encapsulates the challenges overcome, accomplishments achieved, and insights gained in our journey. Throughout the 2023 calendar year, the Burnaby School District remained steadfast in its efforts to reduce greenhouse gas emissions while implementing organizational adjustments to shape future strategies aimed at curbing our carbon footprint.

Burnaby School District #41 continues to lead in energy efficiency and sustainability, recognizing the importance of fostering a healthy and environmentally conscious educational environment. Through innovative approaches, community involvement, and continuous enhancements, such as the integration of renewable energy sources and implementation of hybrid dual fuel HVAC systems and ground source heat pumps, along with fleet electrification, we are steadfast in shaping a more eco-friendly and sustainable future for our community.

Our enduring dedication to emission reduction aligns harmoniously with our organization's overarching mission of promoting sustainability, community stewardship, and accountability across all facets. Numerous stakeholders within the district actively contribute to this collective endeavor, including school-based Green Teams, Instructional Leaders, the Business Services Group, the Facilities Management Group, and various other organizations and associations. While each operates independently, they share a common vision of fostering a culture of environmental responsibility and sustainability by prioritizing energy efficiency measures throughout educational facilities.

ENVIRONMENTAL POLICY

The Burnaby School District's approach to tackling climate change is guided by a comprehensive Environmental Sustainability Policy, first implemented in 2010 which in part states:

"The Board acknowledges that Environmental Sustainability is a joint responsibility of trustees, students and staff and is committed to sound practices that focus on minimizing pollution and refuse, reducing energy use and water consumption, and promoting a healthy environment for students and staff within the limited financial resources available."

This policy is further enhanced by 5-year Strategic Plan in 2019, which includes the following objectives under key priority "Modern, Safe, and Sustainable Learning Environment", Goal 3 – Increase District awareness of climate change and decrease the District's environmental impact:

- Reduce the overall greenhouse gas output and carbon footprint of the District.
- Reduce the District's overall physical waste, diversion, and consumption.
- Engage the Burnaby Youth Sustainability Network (BYSN) to deliver quantifiable environmental outcomes.
- Build awareness of the efforts undertaken by the Burnaby School District as a model for environmental awareness and sustainability.
- Review and strengthen policies and practices related to environmental impact.

SUSTAINABILITY STRATEGIC PLAN

In 2022, the Burnaby School District formally adopted its Sustainability Strategic Plan, setting forth a comprehensive framework for the realization of goals, objectives, and actionable steps aimed at bolstering our response to climate change. This strategic initiative not only mirrors the diverse perspectives and core values of our broader Burnaby Schools community, but also serves to empower the youth within our district to assume leadership roles in sustainability efforts both now and in the future.

Vision: A sustainable learning community where we inspire action and take care of the environment for generations.

Values:

- Indigenous Knowledge and Perspectives
- Equity, Diversity, and Inclusion
- Collaboration, Creativity, and Innovation
- Leadership and Action
- Mindful Resource Use

Goals and Objectives:

1) Support meaningful and innovative educational practices in the curricular areas of sustainability.
    a. Expand and support professional learning opportunities and nurture leadership around sustainability.
    b. Create learning environments for experimentation and transformation.
    c. Identify innovative means and additional opportunities to enhance and inspire student engagement with sustainability.
2) Include Indigenous knowledge as the foundation to understanding and leading sustainable practices.
    a. Understand local history and implement Indigenous knowledge and perspectives to guide sustainable practices.
3) Reduce the District's environmental impact in the areas of energy, paper, waste, and procurement.
    a. Reduce the overall greenhouse gas output and carbon footprint of the District.
    b. Reduce the District's overall physical waste and consumption.

Read the full Sustainability Strategic Plan here.

ACTIONS TAKEN IN 2023

Figure 1 illustrates the distribution of emissions sources across our facilities. Natural gas is the primary source for heating, contributing over 89% of our GHG emissions. In response to the challenges posed by the pandemic, we implemented changes in ventilation protocols for the 2023-24 school year, prioritizing enhanced air circulation and filtration. Despite an 8.8% growth in student enrollment over the 2022-23 and 2023-24 school years, our active energy management strategies, including optimized HVAC scheduling, purging methods, lighting, and ventilation upgrades, led to a notable decrease in consumption and emissions in 2023. This reflects our commitment to sustainability goals while accommodating growing student populations.

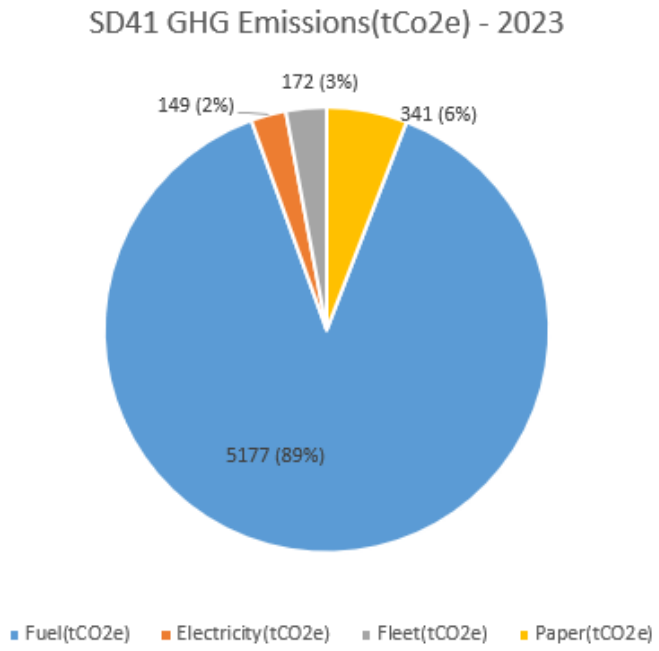

Figure 1: Burnaby School District's GHG Emissions Distribution for 2023

We have implemented a series of proactive measures across our facilities in our ongoing commitment to combat climate change and reduce our environmental footprint. At Edmonds Elementary, we have installed envelope upgrades and heat pump makeup air units to enhance energy efficiency and indoor air quality simultaneously. At Lyndhurst Elementary, we have installed state-of-the-art Energy Recovery Ventilators to further improve thermal comfort within the school. At Marlborough Elementary, we have installed Variable Frequency Drive (VFD) pumps.

Additionally, we have upgraded energy efficient LED lighting at Confederation Park Elementary, Inman Elementary, and Second Street Elementary. These projects signify our dedication to sustainability and align with our broader mission to mitigate climate change impacts through practical, tangible measures within our educational institutions with a total annual energy savings of 83,000kWh.

The opening of the new Burnaby North Secondary School in January 2024 represents a significant milestone in sustainable infrastructure development. Designed with a focus on energy efficiency, the school aims to achieve 38% total energy savings and a lifetime GHG reduction of 553.6 tCO2e. This achievement is facilitated by installing high-efficiency HVAC systems, including a combination of air source and ground source heat pumps, as well as chilled beams. Furthermore, the integration of high-efficiency lighting further enhances energy conservation efforts, highlighting the district's commitment to environmental sustainability and responsible resource management.

Figure 2: Burnaby North Secondary School- New Facility

In 2023, the district enthusiastically expanded its support for Electric Vehicles (EVs) by enhancing infrastructure availability and completing a comprehensive EV Ready Fleet Electrification study to assess fleet suitability, design a transition strategy, and recommend enhancements to charging infrastructure. The decreasing trend in fleet diesel and gas consumption (Ref. Figure 3) underscores our unwavering dedication to sustainable transportation and emissions reduction, marking a significant step forward in our ongoing efforts to promote environmental stewardship and embrace cleaner, greener mobility options for our community.

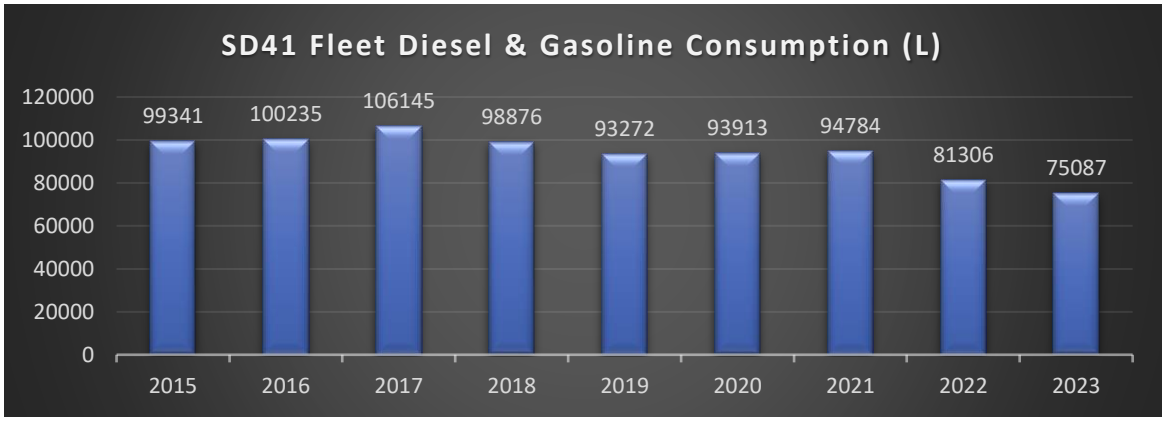

Figure 3: Burnaby School District's Diesel & Gasoline Consumption Trend 2015-2023

PLANS FOR 2024 AND BEYOND

Buildings

At the Burnaby School District, we focused on enhancing sustainability within our facilities by outlining future action plans for 2024 and beyond. This includes installation of state-of-the-art Energy Recovery Ventilators at Gilpin Elementary, boiler upgrades, gas roof top units and hybrid dual fuel roof top units at Burnaby Mountain Secondary School. Additionally, we are planning to install high-efficiency boiler upgrades at both Stoney Creek and Brantford Elementary Schools.

In 2024, Burnaby Mountain Secondary and Burnaby Central Secondary Schools will undergo lighting studies to enhance energy conservation and efficiency. Similarly, Cascade Heights, Capitol Hill, and Morley Elementary Schools are scheduled for lighting upgrades to modernize infrastructure and decrease energy usage. Moving forward, seismic and energy studies are planned to be conducted at Kitchener Elementary and Brentwood Park Elementary, paving the way for future improvements, while continuous optimization studies at Cariboo Hill Secondary and Moscrop Secondary are projected to save 70,000 kWh each.

Leveraging the success of high-efficiency HVAC systems implemented at Burnaby North Secondary School, the design phase of the replacement for Stride Avenue Community School has been finalized, and construction has commenced. This new facility will continue the trend of sustainable infrastructure by incorporating ground source heat pumps. Situated in a rapidly growing area of Burnaby, the upcoming school replacement project is poised to make a substantial positive impact on the local community, offering enhanced facilities and contributing to environmental sustainability efforts.

In 2024 and beyond, the district will escalate its endeavors to reduce GHG emissions through fuel switching, enhanced controls optimization, and behavioral change initiatives. These planned strategies emphasize our dedication to mitigating climate change impacts and advancing towards a greener future within our educational institutions.

Fleet

Prioritizing the reduction of greenhouse gas emissions, especially from the district's 50-vehicle fleet, we are expanding EV charger installations at several elementary schools. This will enhance district-wide coverage, complementing the existing 27 EV charging stations and advancing EV infrastructure development.

In 2024, we eagerly anticipate implementing the EV Ready Fleet Plan, gradually replacing fossil fuel vehicles, and upgrading electrical services to enhance EV charging infrastructure. These initiatives underscore our steadfast commitment to sustainable transportation and reducing emissions from our mobile fleet.

Paper

In 2023, office paper emissions rose to 341 tCO2e, a 43 tCO2e increase from 2022. To address this, in 2024, we will promote digitalization, reduce paper usage, and enhance recycling efforts. Staff will be encouraged to adopt paperless practices and utilize electronic communication. Sustainable procurement of recycled paper will be prioritized. These measures aim to significantly cut office paper emissions and create a more sustainable workplace.

PUBLIC SECTOR CLIMATE LEADERSHIP

Figure 4 illustrates the Burnaby School District's greenhouse gas (GHG) emissions over the past nine years. Starting at 4668 tCO2e in 2015, emissions rose gradually until peaking at 6760 tCO2e in 2022. However, there was a notable decrease in emissions in 2023, dropping to 5839 tCO2e.

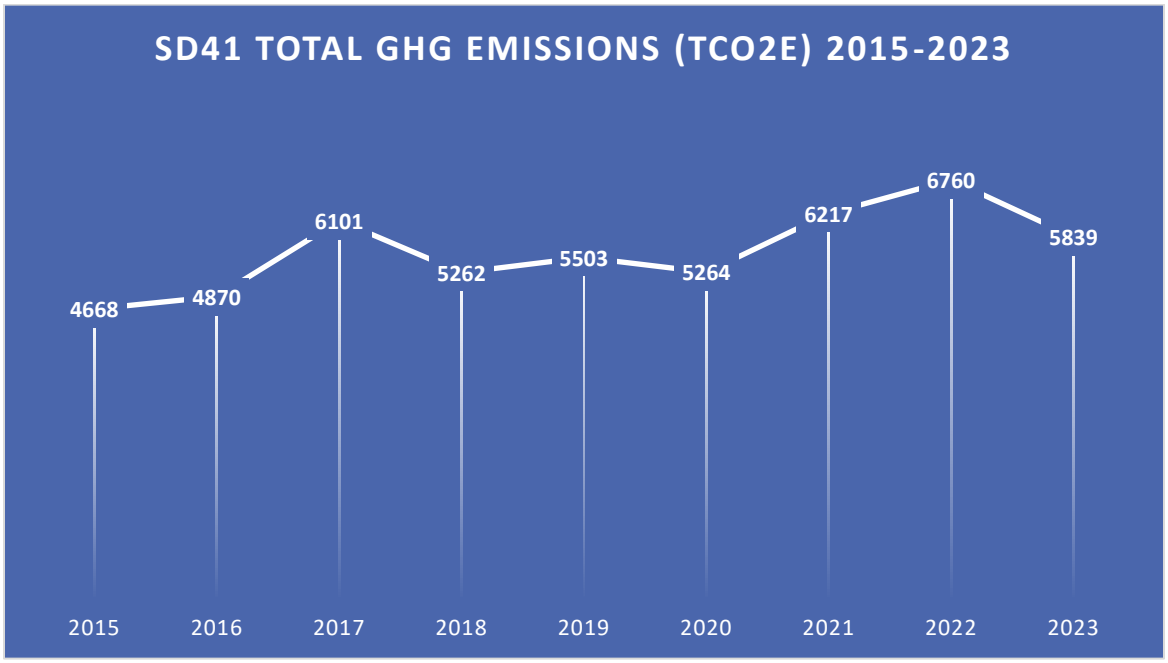

Figure 4: Burnaby School District's GHG Emissions Trend 2015-2023

In 2023, Burnaby School District encountered numerous hurdles in its efforts to curb greenhouse gas emissions. Over the years, the surge in student enrollment and increase in childcare facilities has added load on energy resources, resulting in heightened consumption and emissions. Furthermore, concerns about indoor air quality have prompted adjustments in operational practices to ensure safety and sustainability. Building expansions have intensified energy demands and emissions, while budget constraints and changes in utility rebates have hindered the implementation of energy efficiency projects. Additionally, limited availability of electrical

service has posed a significant obstacle in transitioning to cleaner energy sources. Overcoming these obstacles necessitates strategic solutions and robust public sector climate leadership.

This year the district recruited a new Energy and Sustainability Manager, and a new Energy Specialist, with a focus on emissions reduction projects and enhancing their capacity to implement sustainable initiatives effectively. By streamlining roles and responsibilities and fostering a culture of collaboration and innovation, the district laid a solid foundation for success in advancing its sustainability goals. These restructuring changes not only optimized resource allocation but also empowered team members to drive impactful change across the district.

The energy team's commitment to energy conservation and sustainability, demonstrated through proactive energy studies, energy-efficient equipment upgrades, fleet electrification, and employee engagement, has led to a significant reduction in GHG emissions, making meaningful progress toward our emissions reduction targets and broader sustainability objectives.

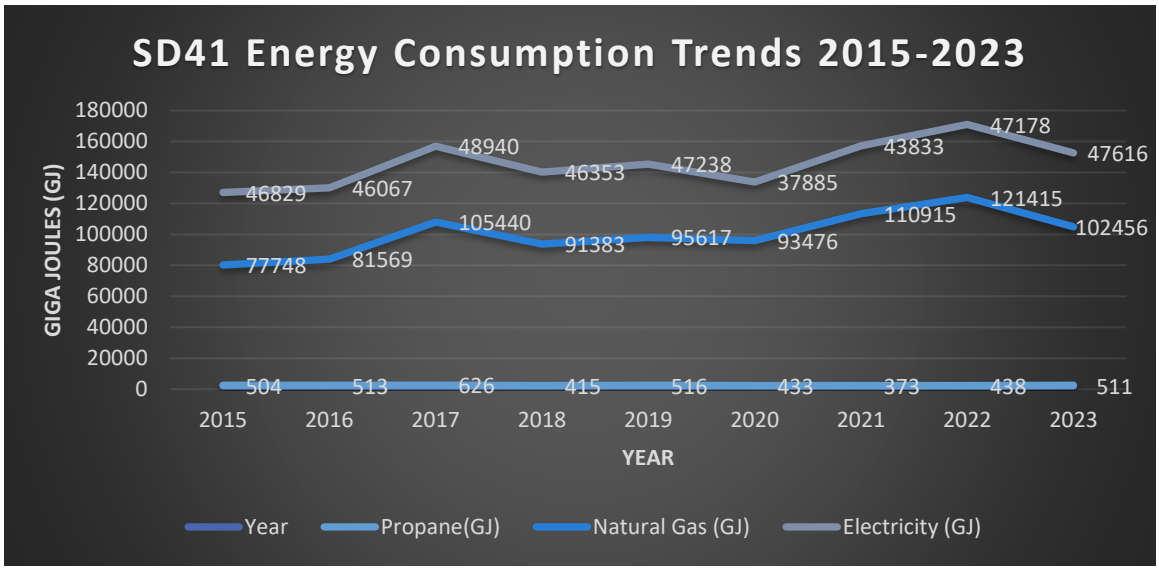

Figure 5:Burnaby School District's Energy Consumption Trends 2015-2023

Inspite of the challenges mentioned, the Burnaby School District has faced the imperative of maintaining its role as a climate leader in 2023. The district continued to push boundaries and innovate with cutting-edge technology, setting an example for other school districts on the path towards a carbon-neutral future. From piloting direct digital control (DDC) systems to adopting LED lighting and exploring heat pumps with natural gas backups, Burnaby School District 41 has consistently demonstrated its commitment to climate leadership.

With a strong commitment to sustainability goals and climate resiliency, the district remains dedicated to upholding this reputation and will continue to explore and implement sustainable practices for years to come. By taking proactive measures to mitigate emissions, promote energy efficiency, and invest in sustainable infrastructure, the Burnaby School District can lead by example and inspire broader community action to combat climate change.

EMISSIONS AND OFFSET SUMMARY TABLE

The 2023 GHG Emissions and Offsets Summary Table below breaks down the total amount of greenhouse gases, calculated as tonnes of carbon dioxide equivalent (tCO2e), we emitted as a District in 2023 and how much we pay to retire the equivalent amount of carbon offsets as our emissions so we can achieve carbon neutrality.

The British Columbia Carbon Neutral Government Regulation establishes a price on greenhouse gas emissions (GHGs) which remains unchanged for 2023 at $25 per tCO2e. Based on this rate we are mandated to purchase offsets for a total of $145,975 plus GST. With this purchase, the Burnaby School District, along with the entirety of BC's public sector, can claim carbon neutrality.

Burnaby School District 2023 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2023.	
Total BioCO_2	5.87 tC02e
Total Emissions (tCO_2e)	5,845 tC02e
Total Offsets (tCO_2e)	5,839 tC02e
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO_2e)	0 tC02e
Grand Total Offsets for the 2022 Reporting Year	
Grand Total Offsets to be Retired for 2022 Reporting Year (tCO_2e)	5,839 tC02e
Offset Investment ($)	@ $25 per tCO2e = $145,975

RETIREMENT OF OFFSETS

Retirement of Offsets:

In accordance with the requirements of the *Climate Change Accountability Act* and Carbon Neutral Government Regulation, The Board of Education School District 41 - Burnaby (the Organization) is responsible for arranging for the retirement of the offset's obligation reported above for the 2023 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.

Executive sign-off:

May 27, 2024

	May 29, 2024
Signature	Date
Ishver Khunguray	Secretary-Treasurer
Name (please print)	Title