

2022 DELTA SCHOOL DISTRICT CLIMATE CHANGE ACCOUNTABILITY REPORT

EXECUTIVE SUMMARY

In almost every decision that we make, reducing emissions and conserving our environment is at the forefront. We are constantly looking for any chance that we have to reduce our consumption of natural gas, electricity, and water while still providing a safe, clean, healthy, and functional learning environment. Budget constraints and working with the existing equipment in our facilities limit what we are able to accomplish, but there were still opportunities in 2022 and more opportunities moving forward to reduce our emissions.

During 2022, the Delta School District produced a total of 3,073 tonnes of CO₂e, 2531 tonnes (82.4%) of that came from burning natural gas for heating. The Delta School District has paid \$80,625.00 plus GST, for 3,225 tonnes of CO₂e offsets (3073 from 2022 and 152 from prior year adjustments), to claim carbon neutrality for 2022 CO₂e emissions.

Carbon Emissions of 3,073 tonnes of CO₂e in 2022, resulted in a 24.3% reduction from the 4,061 tonnes of CO₂e produced in 2010.

Emissions reduction measures in 2021 included:

- Upgrade a dust collector system that uses less energy and reduces the natural gas consumption of the rooftop unit that is ventilating the wood shop.
- Replacement of gas fired rooftop units with new high efficiency units.
- Replace antiquated, oversized boiler with properly sized, high efficiency condensing boiler.
- Replacement of fluorescent lamps and fixtures with LED technology to reduce electrical consumption.
- Green Teams that carried out energy conservation activities.

Emissions Reduction Measures Planned for the Future:

- Continue LED lighting upgrades.
- Continue replacement of gas-fired Roof Top Units with dual fuel electric heat pump/ gas fired backup RTUs, to reduce natural gas consumption and cut CO₂e production.
- Replace domestic hot water heating systems with more energy efficient equipment.
- Replace aging, gas-powered fleet vehicles with electric vehicles.

We are pleased to present the following report outlining our continued pursuit to become carbon neutral.

Doug Sheppard,
Superintendent
of Schools

Darren Duff
Director of Facilities
& Planning

Pierre Ngo, P.Eng.
Electrical Manager

Dean While, P.Eng.
Mechanical Manager

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ABOUT DELTA SCHOOL DISTRICT

"The Delta Board of Education, through the Delta Green Committee, is committed to instilling in it's students, staff, parents, and community an awareness of a commitment to *sustainability* by leading environmental stewardship and fostering a holistic approach towards climate change, energy optimization, waste reduction, and water conservation.

The board is committed to improving its performance in sustainability and will endeavor to conduct its operations and make decisions based upon five priorities: conservation, protection, education, regulation, and recognition.

Within the scope of Environmental Stewardship, the District will actively promote, model and advise decision making, professional learning and actions that will meet these five outcomes."

DECLARATION STATEMENT

This PSO Climate Change Accountability Report for the period January 1, 2022 to December 31, 2022 summarizes our greenhouse gas (GHG) emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2022 to reduce our GHG emissions, and our plans to continue reducing emissions in 2023 and beyond.

COMPARED TO 2010 BASELINE

In 2022, the Delta School District produced a total of 3073 tonnes of CO₂e from all sources reported. Sources included electricity and natural gas used in buildings as well as fuel for fleet vehicles and office paper consumption. This is a 24.3% reduction in Carbon Emissions from the 4,061 tonnes of CO₂e produced in 2010.

OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2022

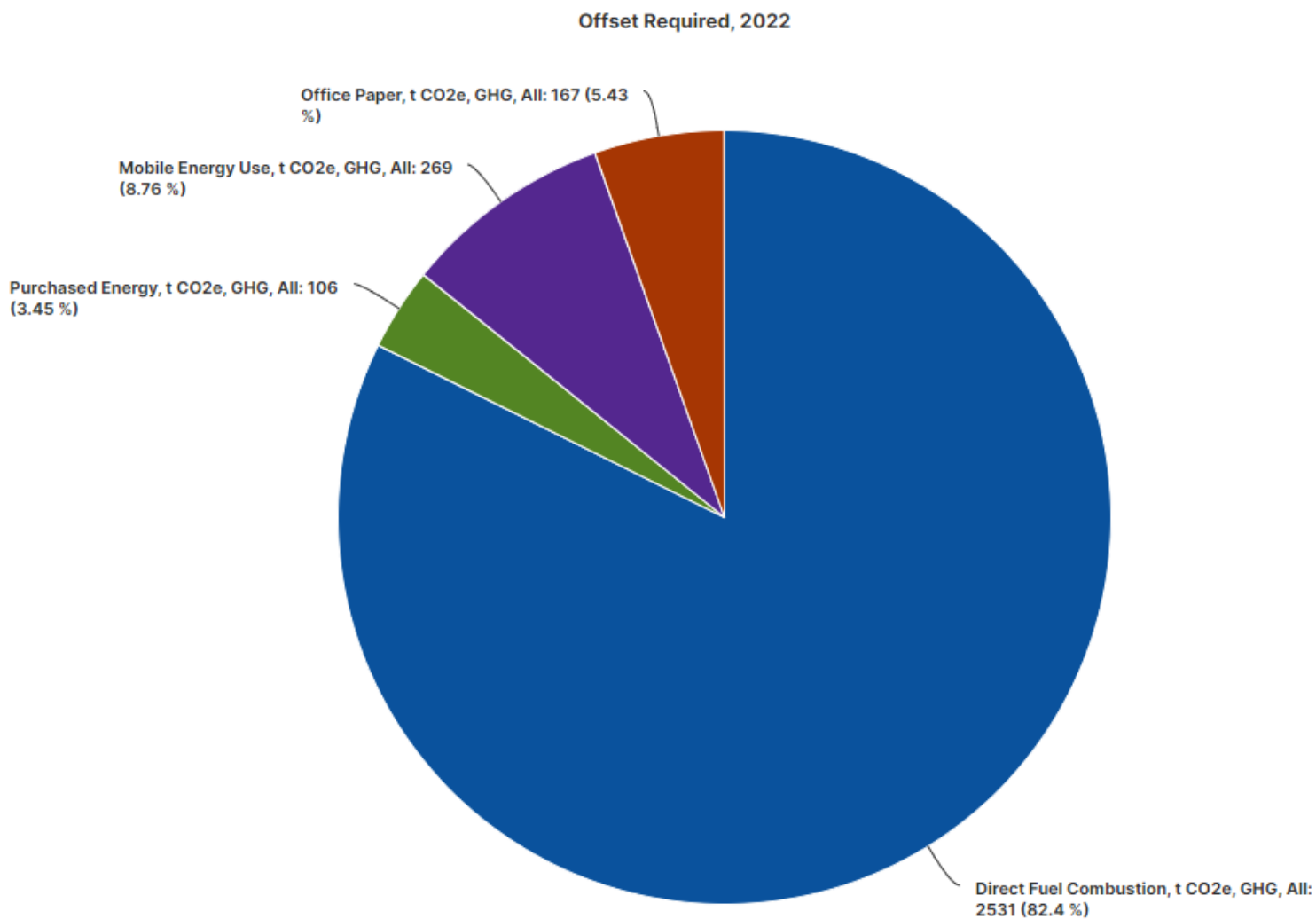
Of the 3,082 tonnes of CO₂e emitted 9.34 tonnes of CO₂e are "Offset Exempt" meaning the total amount the district is required to offset for 2022 is 3,073 tonnes of CO₂e. **There is an additional 152 tonnes of CO₂e for adjustments to offset required GHG emissions reported in prior years.**

This Climate Change Accountability Report for the period January 1st, 2022 to December 31st, 2022 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2022 to reduce our greenhouse gas emissions, and our plans to continue reducing emissions in 2023 and beyond.

The Delta School District has paid \$80,625.00 plus GST, for the offset of 3,225 tonnes of CO₂e to achieve carbon neutrality for 2022 (3073 tCO₂e for 2022 and 152 tCO₂e for prior year adjustment).

The breakdown of the emission sources, as illustrated in Figure 1, spotlights that the vast majority of the greenhouse gas emissions are created from the use of natural gas (82.4%) for the purpose of providing heat to our buildings. Fuel switching to the use of electricity to provide heating through the use of heat pumps, is the most viable way to have a serious impact on reducing carbon emissions. This will significantly increase electricity consumption, which comes at a higher monetary cost.

Figure 1



Emissions and Offsets Summary Table:

Delta School District #37 2022 GHG Emissions and Offsets Summary	
GHG emissions for the period January 1 - December 31, 2022	
Total BioCO ₂	9.34
Total Emissions (tCO ₂ e)	3082
Total Offsets (tCO ₂ e)	3073
Adjustments to Offset Required GHG Emissions Reported in Prior Years	
Total Offsets Adjustment (tCO ₂ e)	152
Grand Total Offsets for the 2022 Reporting Year	
Grand Total Offsets to be Retired for 2022 Reporting Year (tCO ₂ e)	3225
Offset Investment (\$25 per tCO ₂ e)	\$80,625.00

Retirement of Offsets:

In accordance with the requirements of the Climate Change Accountability Act and Carbon Neutral Government Regulation, Delta School District #37 (**the Organization**) is responsible for arranging for the retirement of the offsets obligation reported above for the 2022 calendar year, together with any adjustments reported for past calendar years. 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:



Signature

May 26, 2023

Date

Doug Sheppard

Name (Please Print)

Superintendent of Schools

Title



Delta School District
Inspired Learning

EMISSIONS REDUCTION PROGRAM

JOURNEY OF CARBON REDUCTION

Because of the urgency of Climate Change, investment in sustainable systems must be at the core of all renovations and new construction initiatives within the Delta School District.

For more than 20 years, the Delta School District has been striving to reduce our carbon footprint through countless projects ranging from fine-tuning equipment operation to replacing rooftop units and lighting fixtures with more energy efficient technology. In addition to hardwire replacement programs, and through our Energy Conservation Program Green Teams, the District has continued to encourage our stakeholders to practice resource conservation within schools as well as in the home.

RETROFIT PROJECTS

SOUTH DELTA SECONDARY WOOD SHOP DUST COLLECTION UPGRADE

Replace aging, inefficient dust collector serving the South Delta Secondary Wood Shop with a new variable volume dust collector. This change will limit the electricity consumed by the dust collector since it is run off a VFD and will only exhaust the amount of air that is required by the tools in use. It will also limit the natural gas consumption of the rooftop air handling unit as the OA damper will modulate to match the amount of air required to make-up for the dust collector exhaust.



NORTH DELTA SECONDARY AUTO SHOP HVAC UPGRADES

Replace aging, inefficient roof top air handling units with new high efficiency roof top air handling units at the North Delta Secondary Auto Shop. This change should reduce both our electricity and natural gas consumption.



NORTH DELTA & SOUTH DELTA SECONDARY WALK-IN COOLER/FREEZER REPLACEMENT

Replace the original walk-in cooler/freezer at both North Delta Secondary and South Delta Secondary with a new high R-value casing. Furthermore, the compressor is air cooled instead of water cooled, so our water consumption has been reduced and I would expect this unit to use less electricity.



DELVIEW SECONDARY BOILER UPGRADE

Replace an aging 600 MBH inefficient hot water boiler at Delview Secondary with a 200 MBH high-efficiency condensing boiler that will perform the same function. This change will reduce our natural gas consumption.



LED LIGHTING UPGRADES AT SEAQUAM SECONDARY AND GRAY ELEMENTARY

Replace some fluorescent lights with LED lights at Seaquam Secondary and Gray Elementary. This change will reduce our electricity consumption as well as the amount of maintenance required since we won't have to change out the bulbs as often.

ROOFING RENEWALS AT ANNIEVILLE AND PINEWOOD ELEMENTARY

Sections of roofing at Annieville and Pinewood Elementary schools were replaced to improve building envelope integrity and extend the useful life of each building. By improving building envelope integrity, heat loss is reduced, which results in a reduction in carbon emissions from building operation.

FLEET VEHICLES

In 2022, we completed an EV Fleet Plan which provides a roadmap to transition our maintenance vehicle fleet from internal combustion engines to battery electric vehicles. Our next steps are to engineer the infrastructure upgrades that are required at the maintenance facility so that we have the capacity to charge the EV vehicles that we purchase. Hopefully, we can start purchasing some of the electric vehicles this year as well given that lead time continues to be an issue.

SUSTAINABILITY ENGAGEMENT

GREEN TEAMS

Individual school Green Teams have led a number of energy saving initiatives during 2022.

Some of the energy conservation programs the Green Teams have initiated are listed below:

- Lights out lunches: turn off lights while eating lunch to save electricity.
- Sweater days: plan to wear a sweater and turn the heat down in the school.
- Bike, ride, walk to school days: reduces GHG emissions from vehicles.
- Felt pen, binder, and used face mask recycling programs.
- Litterless lunches: encourage bringing lunches that don't have any waste wrappers.
- School gardens and bee boxes (nesting spots to support/encourage the bee population).

FACILITY RENTALS

We have developed a Sustainability Room Booking Guide so that when space rentals are assigned throughout the district, the facility rental team is able to locate and group these rentals in the most efficient way possible. This should reduce our electricity consumption and greenhouse gas emissions by booking rooms together within zones that share HVAC systems. This will help reduce the number of systems that need to be turned on and avoids unnecessary heating, cooling, and ventilation in empty rooms.

PLANS FOR FUTURE

REPLACEMENT OF ROOF TOP AIR HANDLING UNITS

Antiquated gas fired rooftop heating units serving school shops and classrooms will be replaced with newer technology to reduce carbon emissions, in the coming years, as funding becomes available.

REPLACEMENT OF DOMESTIC HOT WATER SYSTEMS

Mid-efficiency gas fired domestic hot water heaters and boiler plants will be replaced with high efficiency options including high efficiency heaters and boilers with smaller storage capacity.

LIGHTING UPGRADES AND BUILDING SYSTEMS OPTIMIZATION

The Delta School District will continue to perform lighting upgrades to LED technology wherever feasible, and continue with building systems optimization wherever opportunities are available.

WALK-IN COOLER/FREEZER REPLACEMENT

Continue to upgrade aging walk-in cooler/freezers in our Secondary School cafeterias with more efficient assemblies.

EXPLORING SOLAR ENERGY UPGRADES

The Delta School District is exploring opportunities to improve existing solar hot water heating systems in order to get more energy savings from the existing installation. The goal is to reduce our natural gas consumption, particularly during months with more sunshine.