

2021 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 along with some of the COVID requirements limit what we are able to accomplish, but there were still opportunities in 2021 and more opportunities moving forward to reduce our emissions.

During 2021, the Delta School District produced a total of 2,872 tonnes of CO₂e, 2346 tonnes (81.7%) of that came from burning natural gas for heating. The Delta School District has paid \$71,400.00 plus GST, for 2,872 tonnes of CO₂e offsets, to claim carbon neutrality for 2021 CO₂e emissions.

Carbon Emissions of 2,872 tonnes of CO₂e in 2021, resulted in a 29.3% reduction from the 4,061 tonnes of CO₂e produced in 2010.

Emissions reduction measures in 2021 included:

- Replacement of gas fired rooftop units with dual fuel electric air source heat pumps with auxiliary natural gas burners for use on the coldest days of the year when the temperature is below 0C°.
- 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

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, 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.

COMPARED TO 2010 BASELINE

In 2021, the Delta School District produced a total of 2872 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 29.3% reduction in Carbon Emissions from the 4,061 tonnes of CO₂e produced in 2010.

OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2021

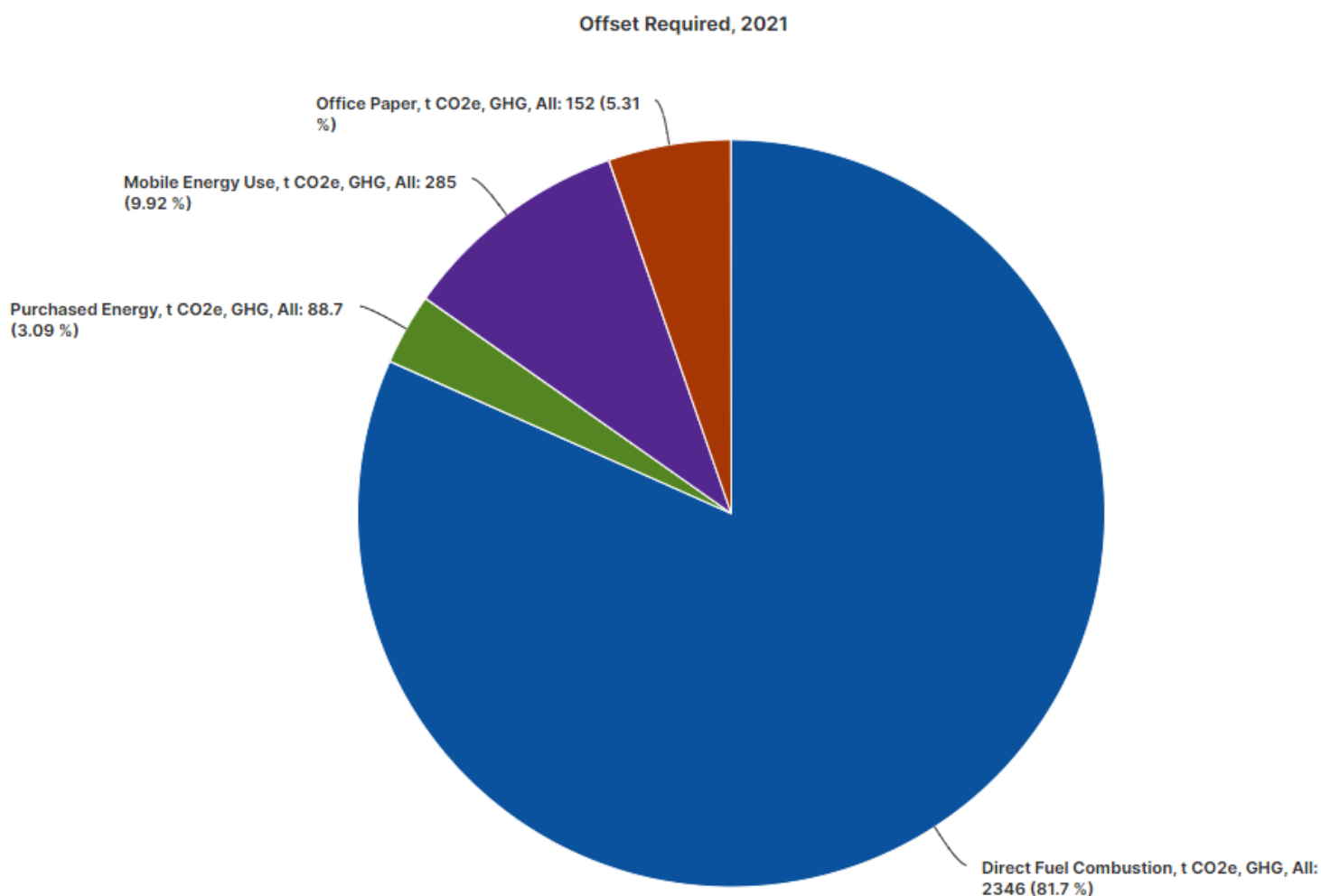
Of the 2,882 tonnes of CO₂e emitted 9.5 tonnes of CO₂e are "Offset Exempt" meaning the total amount the district is required to offset for 2021 is 2,872 tonnes of CO₂e.

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

The Delta School District has paid \$71,800.00 plus GST, for the offset of 2,872 tonnes of CO₂e to achieve carbon neutrality for 2021.

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 (81.7%) 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 2021 GHG Emissions and Offsets Summary	
GHG Emissions Created In Calendar Year 2021	
Total Emissions (tCO ₂ e)	2882
Total BioCO ₂	9.49
Total Offsets (tCO ₂ e)	2872
Adjustments to GHG Emissions Reported In Prior Years	
Total Offsets Adjustment (tCO ₂ e)	0
Grand Total Offsets for the 2021 Reporting Year	
Grand Total Offsets (tCO ₂ e) to be Retired for 2021	2872
Offset Investment (\$25 per tCO ₂ e)	\$71,800.00

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 2021 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

June 1, 2022

Date

Doug Sheppard

Name (Please Print)

Superintendent

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

GIBSON, McCLOSKEY, AND HELTINGS ELEMENTARY HVAC UPGRADES

Replace aging, inefficient roof top air handling units with high efficiency heat pumps. This may increase our electricity consumption but it will reduce our natural gas consumption.

- a. Gibson Elementary: replace six 2.5 tonne units and one 4 tonne unit.
- b. McCloskey Elementary: replace four 2.5 tonne units and one 4 tonne unit.
- c. Hellings Elementary: replace two 4 tonne units.



COUGAR CANYON GYMNASIUM HVAC UPGRADES

Replace aging, inefficient roof top air handling units with new high efficiency roof top air handling units at the Cougar Canyon Elementary gym and change rooms. Also replace ineffective ducting with proper distributed ducting so that the gym will reach optimum temperature faster and more efficiently. This change should reduce both our electricity and natural gas consumption.



DELTA SECONDARY WALK-IN COOLER/FREEZER REPLACEMENT

Replace the original walk-in cooler/freezer at Delta Secondary with a new high R-value casing c/w more efficient refrigeration components that use digital controls. 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.



BURNSVIEW SECONDARY BOILER UPGRADE

Replace an aging 900 MBH inefficient hot water boiler at Burnsvie 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 SANDS, COUGAR CANYON, AND PORT GUICHON

Replace some fluorescent lights with LED lights at Sands Secondary, Cougar Canyon Elementary, and Port Guichon 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 BEACH GROVE, ENGLISH BLUFF, HAWTHORNE, AND LADNER

Sections of roofing at Beach Grove, English Bluff, Hawthorne, and Ladner 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

We used 2021 to research options for changing some of our fleet to electric vehicles. Our plan is to purchase electric vehicles for our fleet starting in 2022 and begin work on the infrastructure required at our maintenance facility headquarters to charge these vehicles. There is a lot to plan for as we transition from gas powered vehicles to a fleet of electric vehicles and the future is a bit uncertain given the limited supply of commercial vans and trucks on the market today. However, we are taking a long-term view at this upgrade and will begin laying the groundwork in 2022.

SUSTAINABILITY ENGAGEMENT

GREEN TEAMS

Individual school Green Teams have led a number of energy saving initiatives during 2021.

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).

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.

REPLACEMENT OF DUST COLLECTION SYSTEM

Replace original dust collection system at the South Delta Secondary wood shop with a more efficient assembly using VFD's and blast gates to limit the amount of make-up air required. This change should save electricity and natural gas.

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.