2021 CLIMATE CHANGE ACCOUNTABILITY REPORT

Surrey Schools
LEADERSHIP IN LEARNING

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DECLARATION STATEMENT

This Climate Change Accountability Report summarizes Surrey Schools' GHG emissions and the actions taken to reduce them for the period January 1st, 2021 to December 31st, 2021.

By June 30, 2022 Surrey Schools' final **Climate Change Accountability Report** will be posted to the website www.surreyschools.ca

Despite continual growth in the building portfolio area and student numbers, Surrey Schools has reduced its GHG emissions by 12%

EXECUTIVE SUMMARY

On behalf of Surrey Schools, we are pleased to submit our **Climate Change Accountability Report** for 2021. Surrey Schools continues to investigate and develop projects and programs that will improve the sustainability of the organization. Surrey Schools has adopted an environmental sustainability policy and made commitments to energy and greenhouse gas emission reductions that will see many positive benefits for both the organization and the environment.

Strategies to enhance sustainability include: collaborative work between key departments to optimize the operation of buildings and the vehicle fleet; data analysis; identification of greenhouse gas emission targets; the monitoring of energy use, the consumption of material goods, and waste disposal volumes; and engagement of staff and students. **As part of its typical facilities work, Surrey Schools completed several school upgrades that will contribute to reductions** in energy use and greenhouse gas emissions.

As with many organizations, COVID-19 caused changes in the regular delivery of services and impacted typical consumption levels. There was an increase in both fleet- and paper-related emissions, likely from a post-COVID rebound in school occupancy and operations when compared to the previous year. Additionally, there was a change in value of the emissions factor associated with electricity that resulted in lower emissions for buildings. The net result was a **slight decrease in 2021 emissions compared to 2020.**

Despite significant growth in both the number of schools and the student population, in 2021 Surrey Schools showed **a 12% reduction** in greenhouse gas emissions. With future projects, overall emissions are expected to decline as we pursue provincial reduction targets of 16% by 2025 and 40% by 2030.

Mark Pearmain
Superintendent of Schools

Jon Harding
Secretary-Treasurer

ABOUT SURREY SCHOOLS

The Surrey School District was formed in 1906 and is the largest of 60 school districts in the province of British Columbia. Surrey Schools is governed by an elected board of seven trustees representing the cities of Surrey and White Rock.

One of the fastest growing districts in the province, the Surrey School District is dedicated to the vision of leadership in learning.

As of 2021, there were 137 buildings and 12,500 teachers and staff dedicated to supporting kindergarten to Grade 12 students in Surrey, White Rock, and Barnston Island.

Surrey Schools

2021 Quick Facts

- 73,000 K-12 students
- 12,500 staff and teachers
- $860 million operating budget
- 104 elementary schools
- 21 secondary schools
- 5 learning centres
- 4 adult education centres
- 3 administration buildings
- School populations ranging from 80 to 1,900 students

GREENHOUSE GAS TARGETS

B.C.'s Climate Change Accountability Act (formerly the Greenhouse Gas Reduction Targets Act) specifies targets and the province has identified these milestones for reducing greenhouse gas emissions compared to a 2007 baseline:

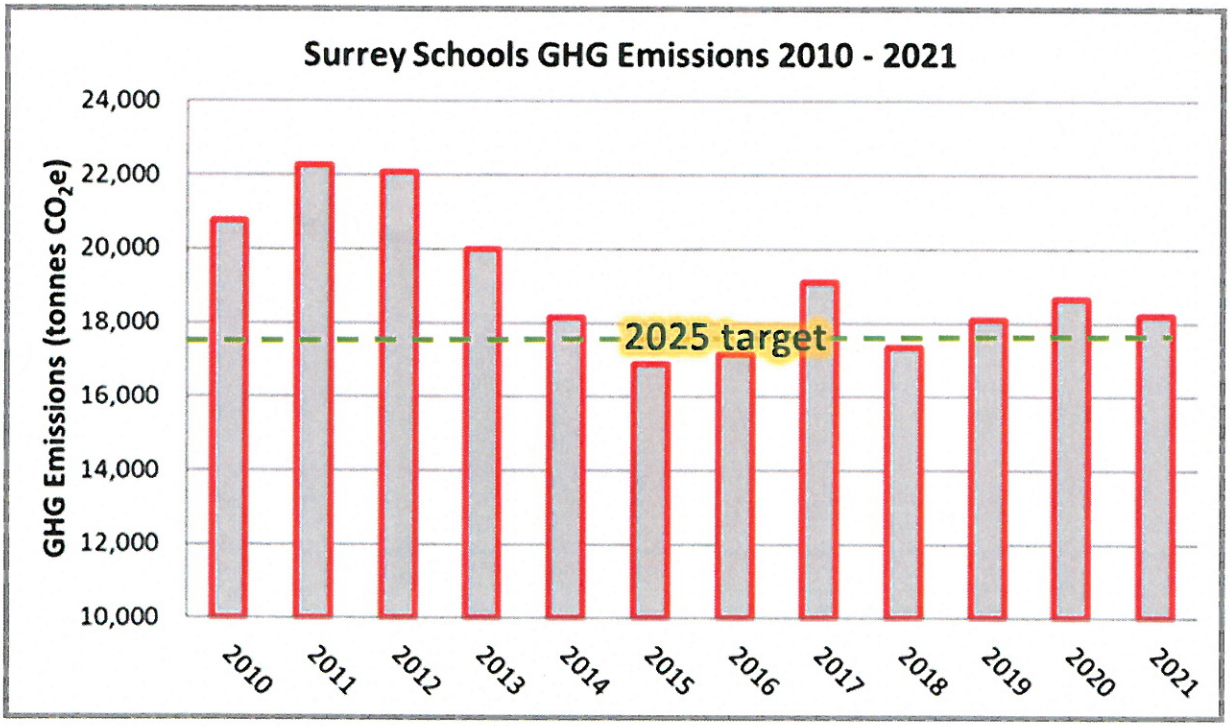
- 16% reduction by 2025
- 40% reduction by 2030
- 60% reduction by 2040
- 80% reduction by 2050

Surrey Schools started reporting on greenhouse gas emissions in 2010 and as such the lack of availability of records from 2007, especially for paper and fleet fuel, meant the accuracy of the data could not be confirmed. Fortunately the estimate for 2007 emissions is similar to 2010 actual emissions and the latter is used as the de facto baseline for internal energy management and GHG targets. As part of the *Road Map to 2030* the province has adopted an interim target of a 16% reduction by 2025. They also specified additional targets for public sector organizations of a 50% reduction in building emissions and 40% reduction in fleet emissions by 2030.

GREENHOUSE GAS TRACKING

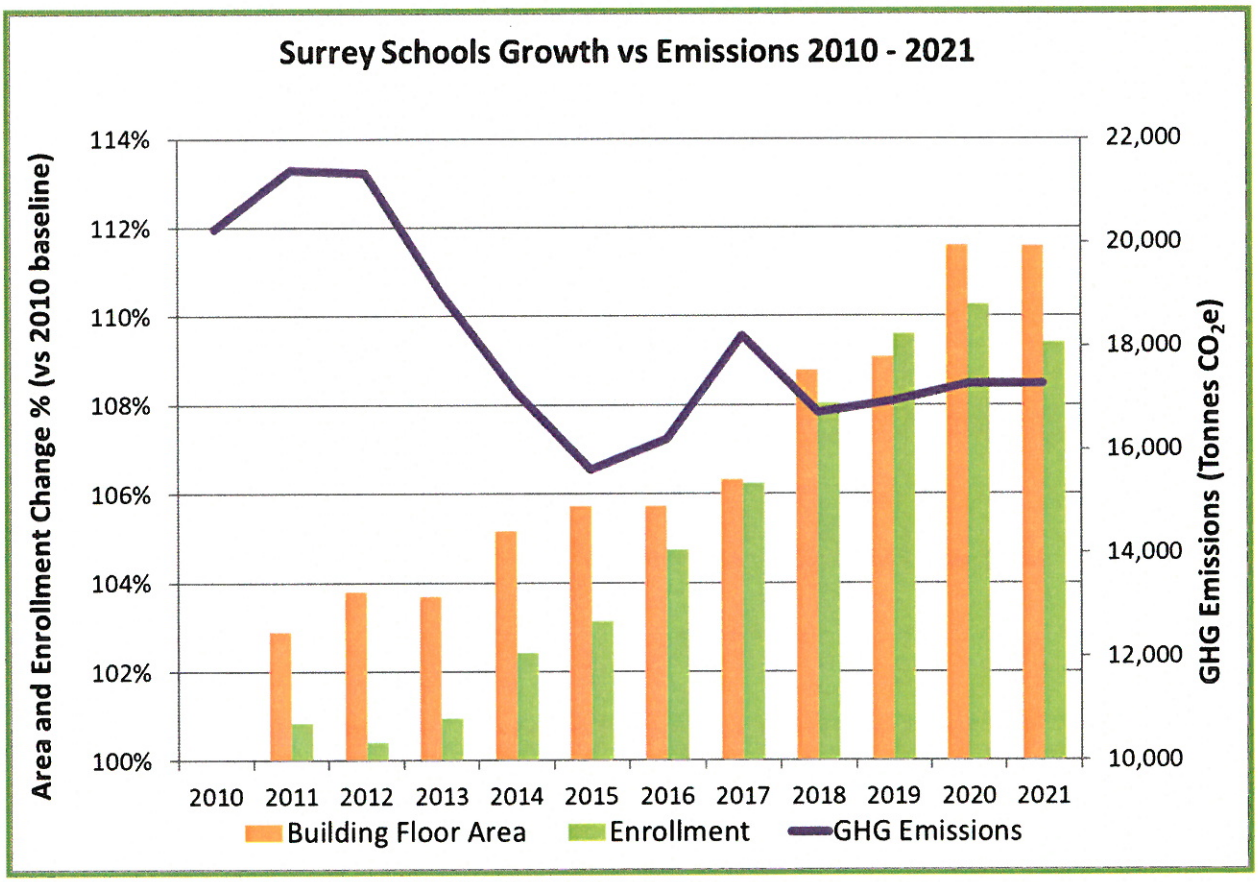
Reportable greenhouse gases are based on the annual measured consumption of energy in buildings, office paper, and fuel for fleet vehicles.

As of 2021, Surrey Schools' efforts to reduce emissions have resulted in a decrease of 12% from 2010. The 2021 emissions were a little lower than 2020 owing to a decrease in building emissions (see page 12 for details).



DISTRICT GROWTH

Surrey Schools has been growing to **provide** services for an increasing student population. Since 2010, Surrey Schools' useable facility space from new schools, additions, and portables has increased by **12% and student enrollment has increased by 9%.** Despite these demands, energy management efforts have reduced energy consumption and related greenhouse gas emissions compared to the 2010 baseline year.



ACHEIVING CARBON NEUTRALITY

Starting in 2010 provincial legislation has required that provincial entities, including school boards, be carbon neutral each year and also issue a public report detailing their emissions levels and progress in reducing greenhouse gas emissions.

In order to achieve annual carbon neutrality, it is necessary to purchase carbon offsets equivalent to quantity (in tonnes) of calculated, annual GHG emissions. The money collected by the provincial government for carbon offsets is invested in certified, emissions-reducing projects.

At $25 per tonne, Surrey Schools' cost to offset 2021 emissions was **$475,361.25 including** tax.

2021 REPORTED EMISSIONS & OFFSET SUMMARY

School District #36 (Surrey) GHG Emissions and Offset for **2021** (tCO_2e)	
GHG Emissions created in calendar year 2021:	
Total Emissions (tCO_2e) *	18,109
Total $BioCO_2$	40.9
Total Offsets (tCO_2e)	18,109
Adjustments to GHG Emissions Reported in Previous Years:	
Total Offsets (tCO_2e)	0
Grand Total Offsets for the 2021 Reporting Year :	
Grand Total Offsets Required (tCO_2e)	18,109
Total Offset Investment	$475,361.25

- excludes emissions of 237 tCO_2e from fuel for buses but includes "estimated emissions" from rental of district-owned buildings.

Retirement of Offsets:

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, School District #36 (Surrey) (**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 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.

	May 31, 2022
Signature	Date
Jon Harding	Secretary -Treasurer
Name	Title

2021 GREENHOUSE GAS EMISSIONS SOURCES

Buildings

GHG emissions from buildings result from the energy consumed to provide heating, cooling, ventilation, and power to schools and other district facilities. Property owned by the district but rented out contribute to reported emissions and offset calculations but for internal tracking purposes are not included as the district has little control over them.

Fleet

Fleet emissions come from the use of fossil fuels in the vehicle fleet that primarily comprises maintenance vehicles and school buses. Fuel for school buses is excluded from offset calculations but included below for tracking purposes.

Office Paper

The emissions associated with consumption of office/printer paper.

Emissions Source	2021 GHG Emissions (tonnes of CO_2e)	% of 2021 Emissions	2021 Results Compared to 2020	2021 Results Compared to 2010 Baseline
Buildings	16,144*	90%	4.4% decrease	12.1% decrease
Fleet	1,193	5%	8.4% increase	2.8% increase
Paper	855	5%	31.4% increase	30.8% decrease

* excludes 154 tonnes for buildings rented out on property held by the district e.g. houses.

** excludes biogenic emissions but includes 237 tonnes for school bus fuel emissions though neither are required to be included in offset purchase calculations.

2021 GHG ACTIONS - BUILDINGS

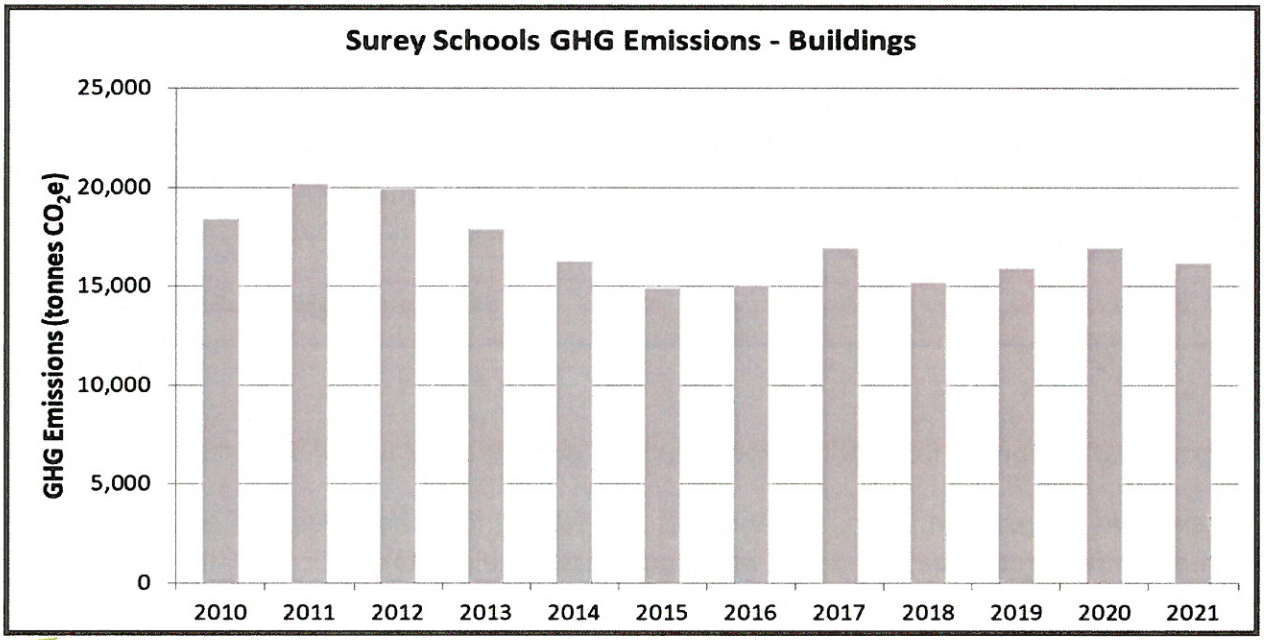
BUILDINGS

A large portfolio of buildings, requires a strategic energy management approach to tackle energy use and greenhouse gas emissions. It is important to have integrated planning among key departments as well as a focus on energy efficiency and sustainable design.

2021 building GHG emissions decreased 4.1% from 2020 and 12% from 2010. The natural gas portion of building energy emissions actually increased but an update in the emissions factor associated with electricity used in buildings resulted in a net decrease in GHGs. The small amount of emissions from buildings that are owned and rented out by the district are not shown in the graph below.

Several energy conservation projects were completed including:

- Replacement of secondary school chiller with an air source heat pump to reduce the use of natural gas use for heating
- Boiler upgrades to more efficient models at four schools
- Building controls tune-ups at several schools and the operations centre



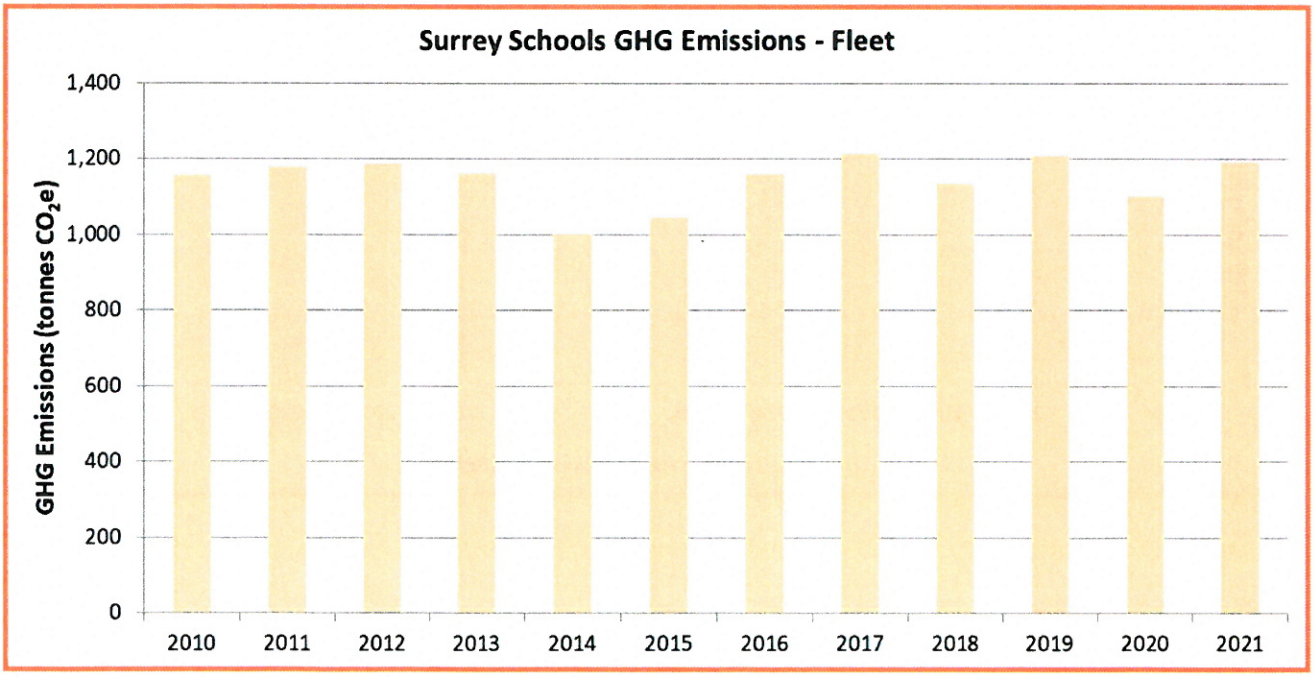
2021 GHG ACTIONS - FLEET

FLEET

There has been growth in the size of the of the vehicle fleet to service a growing number of schools but fuel use has been countered to some degree by improvements in fuel economy. Annual fuel consumption can vary depending on vehicle fuel efficiency, the number of school projects and service requests, and snow removal demands. Though fuel for school buses is not included in offset purchase calculations, fuel for all fleet vehicles are included in the emissions graph below for operational tracking purposes.

The 2021 Surrey Schools' fleet emissions increased 8.4% from 2020. This was, in part, due to a rebound in the use of the fleet compared to 2020 when activities were reduced due to COVID. 2021 fleet emissions were up 2.8% compared to 2010.

Actions taken in 2021 to reduce fleet emissions included introduction of an anti-idling policy and more efficient routing of delivery vehicles.

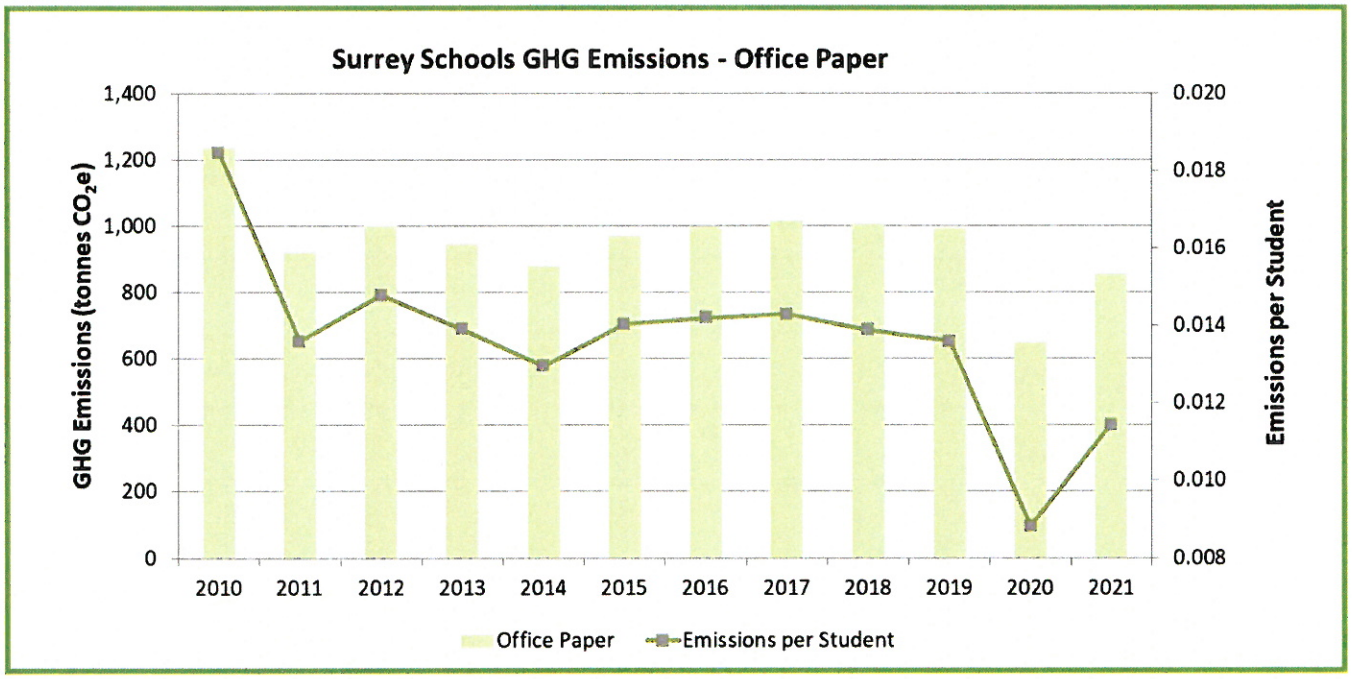


2021 GHG ACTIONS - PAPER

PAPER

Emissions are compiled from paper used in printing for teaching and administration activities. Due to school occupancy rebounding from COVID in 2020 there was a significant increase in paper use for 2021 though it was still 31% below the baseline level.

It remains to be seen but the use of online teaching tools and techniques adopted during COVID may result in a persistent reduction in paper use. Surrey maintained a standard of purchasing office paper with 30% recycled content resulting in reduced greenhouse gas emissions.



CONSERVATION CULTURE

Surrey Schools is working to create a culture of conservation by engaging staff and students in the district's energy and emissions reduction initiatives. Behind the scenes, the sustainability team set up water consumption and solid waste in the online tracking system to better understand usage and share information. Throughout the school year there were communications around sustainability on key dates such as Earth Day. As a result of a variety of initiatives and ongoing programs, **Surrey Schools also received the national *Canada's Greenest Employers* award for 2021.**

Students and staff at Surrey Schools are creating a culture that makes conservation an everyday activity and proving that with small efforts they can reduce energy and paper consumption and increase waste diversion rates. Restrictions from COVID still tempered the return to in-person sustainability engagement activities but the following were still undertaken:

- **Vacation Shut Down Campaign (Christmas, March break, summer)**
- **Elementary school Sustainability Challenge campaign**

GREEN BUILDINGS

Surrey Schools' new construction projects are built to a higher level of sustainability and energy efficiency than required, often exceeding the current building code.

With new schools being constructed to higher levels of energy efficiency, they operate at less than half the energy intensity and much lower emissions than the district average.

Constructing energy efficient buildings with fewer emissions requires integrated design and energy modelling early in the planning process.

The **two schools listed below opened in 2021 and have incorporated energy efficient design and lower emissions HVAC equipment.**

School
Grandview Heights Secondary
Maddaugh Road Elementary

ONGOING EFFORTS TO REDUCE EMISSIONS

Surrey Schools' GHG reduction initiatives will continue to be focused on energy efficiency and conservation within our schools and administrative facilities, the largest source of GHG emissions in the district. Surrey Schools is actively pursuing both low carbon and more efficient technologies in new construction and retrofit projects and these will be key strategies in the coming years.

In any large organization planning is essential in reaching targets and goals. Surrey Schools will continue to track the energy performance of each building and update the district's strategic energy management plan.

Upcoming energy efficiency projects slated for 2022 include:

- LED Lighting retrofits at five sites
- Upgrades to heating systems (boiler plants) at two elementary schools
- Replacing natural gas-fired rooftop units with low-carbon heat pumps at one elementary school
- Building controls recommissioning and upgrades
- Purchase of two electric school buses

Beyond 2022, Surrey Schools will continue to evaluate pathways to achieve the province's public sector emissions reduction targets, set internal GHG targets, and further incorporate sustainability into our operations.