

2017 CARBON NEUTRAL ACTION REPORT

Surrey Schools
LEADERSHIP IN LEARNING



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We chose to incorporate the Western Painted Turtle (Chrysemys pictabellii) into the design of the 2017 Carbon Neutral Action Report to highlight this locally red-listed (endangered) species. The Western Painted Turtle is a small freshwater turtle distinguished by its dark, smooth upper shells and its bright red and yellow markings on its legs and ventral shell.

The species is at risk in Southwest BC because its habitat is also that favoured by humans. Nesting areas can be tough to spot and are vulnerable to damage by human activities, such as soil compacting or shoreline development for man-made beaches, boat launches and roads. It may be possible to help restore degraded painted turtle habitat, create new nesting habitat or provide basking logs. Find out how you can help protect wetlands through programs such as Naturescape BC, BCWF's Wetland-keepers and Wild BC.



ABOUT THE DESIGN



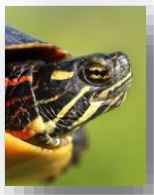
DECLARATION STATEMENT

This Carbon Neutral Action Report for the period January 1st, 2017 to December 31st, 2017 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2017 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2018 and beyond.

By June 30, 2018 Surrey Schools' final Carbon Neutral Action Report will be posted to our website at www.surreyschools.ca.

Surrey Schools has reduced GHG emissions by 19% since 2010 when normalizing for changes in weather.

Our goal is to reduce emissions by 25% from our 2010 baseline by 2020.



EXECUTIVE SUMMARY

On behalf of Surrey Schools, we are pleased to submit our Carbon Neutral Action Report for 2017. We continue to enhance our focus on sustainability across our organization, both in our operations and through integration in curriculum. In October 2017 the Board adopted an Environmental Sustainability policy, which recognizes the importance of the natural environment in building a healthy and sustainable future and acknowledges our responsibility to conduct business in an environmentally responsible manner.

Our environmental sustainability objectives continue to be advanced by the passion and commitment of staff and students. We were proud to be recognized as one of Canada's Greenest Employers in 2017 for the second year running and are committed to continuing to enhance our sustainability program by bringing together our sustainability practices under a comprehensive sustainability strategy. Stakeholder consultation to support the development of an environmental sustainability vision and framework for Surrey Schools got underway in 2017.

Over the past year, we have continued to work to reduce our greenhouse gas emissions and overall environmental footprint. We continue to focus our efforts on our largest source of greenhouse gas (GHG) emissions: the energy used to heat and power our schools and other buildings. A number of energy efficiency projects were successfully completed in 2017 as part of our comprehensive strategic energy management program.

In spite of our ongoing efforts to reduce emissions, a significantly colder winter in 2017 combined with continued growth in facility space and staffing levels resulted in increases to our emissions across all categories. With weather and growth being outside of our control, we know that we need to continue to our efforts to construct low carbon schools, improve the efficiency of our fleet and reduce paper consumption. In 2018 and beyond we will continue to deliver environmental sustainability educational programs and to make investments in our energy efficiency programs that improve the quality and comfort of the learning environment for students and staff.

Dr. Jordan Tinney
Superintendent of Schools

D. Greg Frank
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.

With 130 kindergarten to Grade 12 schools serving Surrey, White Rock and Barnston Island, the Surrey School District employs more than 10,000 teachers, administrators, professionals and support staff, all of whom work tirelessly to ensure that children are getting the best start they can, and the preparation to be our leaders of tomorrow.

Surrey Schools Quick Facts

70,736 K-12 Students

10,989 Staff including

6,063 Teachers

$663 million Operating Budget

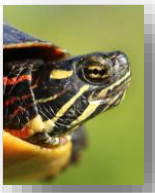
101 Elementary Schools

20 Secondary Schools

5 Learning Centres

Schools ranging in size from **26 to 2036 students**





ACHIEVING CARBON NEUTRALITY

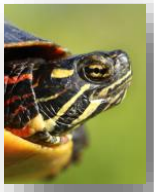
The 2007 Greenhouse Gas Reduction Targets Act established the following emission reduction targets for the B.C. public sector:

- By 2020, B.C. will reduce greenhouse gas emissions (GHG) by 33 per cent, compared to 2007 levels.
- By 2050, GHG emissions will be reduced by at least 80 per cent below 2007 levels.

The act also requires the provincial government, including provincial ministries and agencies, schools, colleges, universities, health authorities and Crown corporations, to be carbon neutral each year starting in 2010 and to make public a report every year detailing actions taken towards reducing greenhouse gas emissions.

Achieving carbon neutrality involves five specific actions: measuring operational GHG emissions, reducing emissions where possible, offsetting the remainder of emissions, reporting on emissions reduction actions and verifying emissions. A carbon offset is a greenhouse gas emissions reduction tool that is used to compensate for emissions. Offsets, measured in terms of carbon dioxide equivalency, represent the net reduction in emissions that occurs when carbon offset payments are invested by the provincial government in emissions-reducing projects.

To become carbon neutral for the 2017 calendar year, Surrey Schools applied carbon offsets of 17,970 tonnes of carbon dioxide equivalent (tCO_2e). At a cost of $25/tonne, Surrey Schools' total offset investment for 2017 is $449,250 ($471,712.50 with GST included).



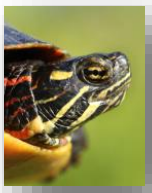
2017 EMISSIONS & OFFSETS SUMMARY

School District #36 (Surrey) GHG Emissions and Offsets for 2017 (tCO_2e)	
GHG Emissions created in calendar year 2017:	
Total Emissions (tCO2e)	18,209
Total Emissions for Offsets (tCO2e)	17,970
Adjustments to GHG Emissions Reported in Previous Years:	
Total Emissions (tCO2e)	0
Total Emissions for Offsets (tCO2e)	0
Total Emission for Offset for the 2017 Reporting Year :	
Total Offsets (tCO2e)	17,970

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 2017 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 15, 2018
Signature	Date
D. Greg Frank	Secretary Treasurer
Name	Title



2017 GREENHOUSE GAS EMISSIONS

Surrey Schools has calculated our 2017 carbon footprint, in accordance with the Greenhouse Gas Reduction Targets Act, to be 18,209 tonnes of CO2 equivalent. Our emissions a generated from three main sources:

Buildings

GHG emissions from buildings result from the fossil fuels consumed to provide heating and cooling and electricity to schools and other district facilities. These emissions account for 87.5% of our overall emissions.

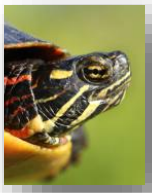
Fleet

Emissions categorized as fleet are direct emissions resulting from the fossil fuels used to power the district's fleet vehicles, including maintenance vehicles and school busses. These emissions make up 6.9% of the district's overall emissions.

Supplies (Office Paper)

Emissions categorized as supplies are indirect emissions originating from the district's use of office paper and account for 5.6% of the district's overall GHG emissions.

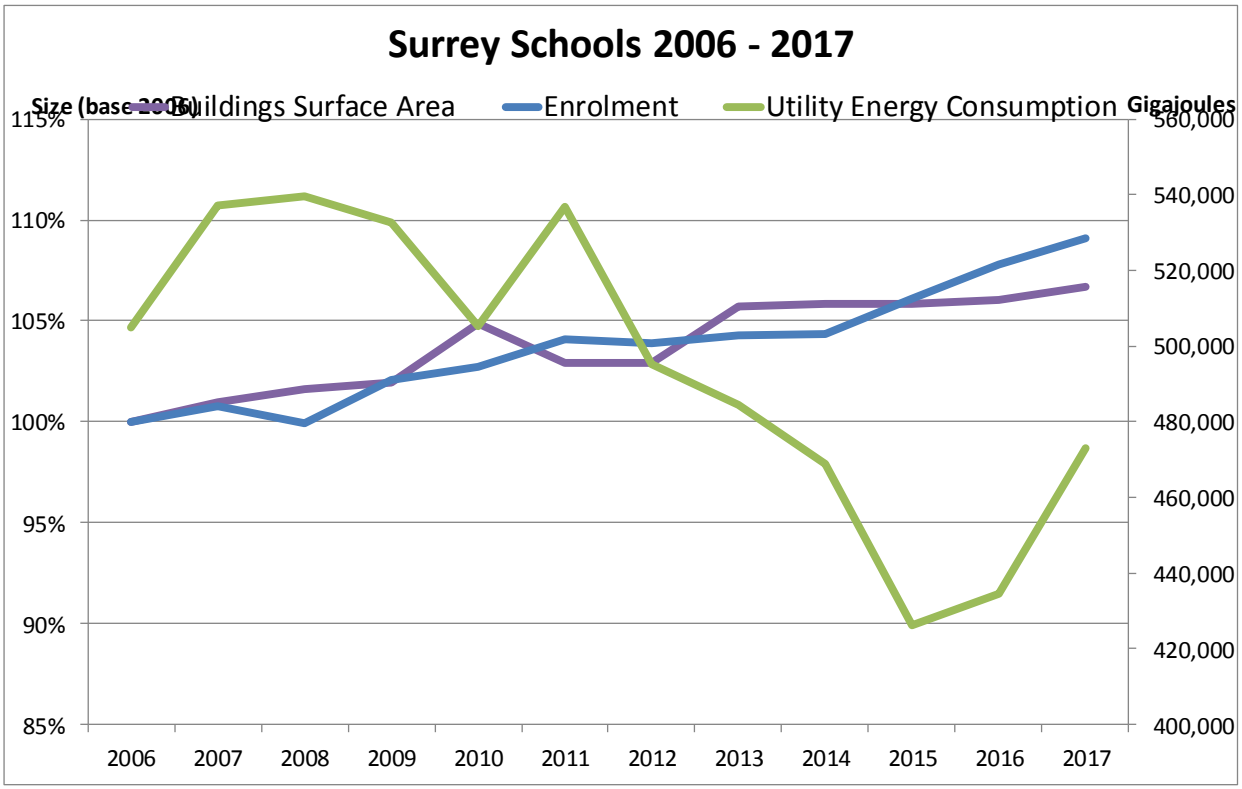
Emission Source	2017 GHG Emissions (Tonnes of CO_2e)	2017 Results Compared to 2016	2017 Results Compared to 2010 Baseline
Buildings	15,936	14% Increase	11% Decrease
Fleet	1,257	5% Increase	5% Increase
Paper	1,016	2% Increase	18% Decrease

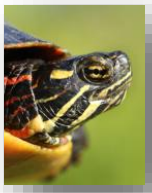


2017 GREENHOUSE GAS EMISSIONS

Surrey Schools employs a three-pronged strategy to lower its carbon footprint: sustainable building design and retrofit, energy efficient building operations, and engagement of staff and students in conservation initiatives.

Surrey Schools continues to grow and expand services to an increasing student population. Since 2005 Surrey Schools' useable facility space has increased by 7 per cent and student enrollment has increased by 9 per cent. Keeping pace with this growth has required ongoing construction of new schools, building additions, major renovations to existing facilities, and the use of over 300 portables as instructional spaces. Yet, in spite of increased energy demands, energy conservation and efficiency measures have effectively reduced energy consumption and greenhouse gas emissions, with both seeing significant declines from 2011 to 2015. Growth combined with a cooler winter in 2017 has resulted in increased in emissions in 2017.



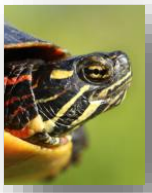


2017 GREENHOUSE GAS EMISSIONS

Surrey Schools has met the challenges of rising costs and increased demands on building capacity through integrated and strategic planning across multiple departments, working with conservation partners and government agencies.

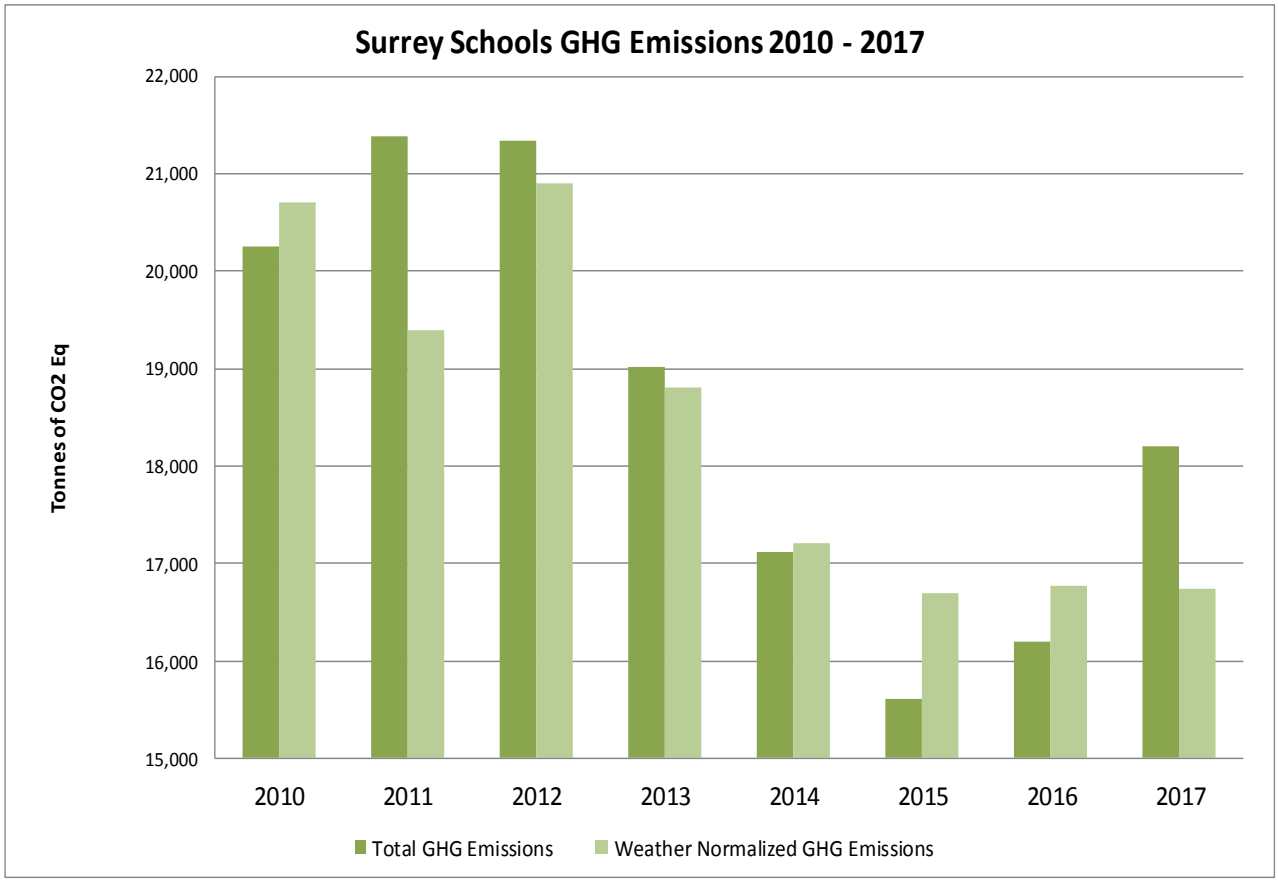
Executive support has also been a critical component of the district's energy management and conservation success. In 2011, the Surrey Board of Education established an Energy Management and Conservation policy and in 2014 the Board re-affirmed the district's commitment to maintaining and enhancing conservation initiatives by once again identifying to environmental stewardship as one of the district's six guiding principles. In 2017 the Board adopted an Environmental Sustainability Policy and work began to develop a comprehensive sustainability strategy for the district. Senior management has played an active role in energy and emissions planning and assessment with BC Hydro and other key conservation partners. In 2017 Surrey Schools was proud to be recognized for the second time as one of Canada's Greenest Employers.

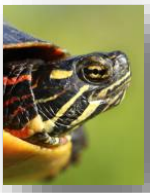
2017 CANADA'S GREENEST EMPLOYERS



2017 GREENHOUSE GAS EMISSIONS

In the face of continued growth, sustained emissions reductions are challenging to achieve. In spite of energy efficiency initiatives, in 2017 Surrey Schools experienced 12% increase in total emissions. The increase can be attributed to a much colder winter which increased natural gas required for heating as well as an increase in the number of fleet vehicles and a small increase in paper consumption. After normalizing for weather (temperature) differences, total GHG emissions actually decreased by a modest 0.2% compared to 2016. 2017 total emissions are 10% lower in 2017 than our 2010 baseline, however we recognize that continued focus on emissions reductions will be required in order to achieve our objective of 25% reductions by 2020.



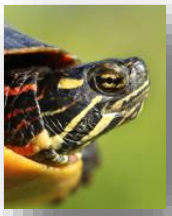


ACTION TAKEN TO REDUCE GREEN-HOUSE GAS EMISSIONS IN 2017

BUILDINGS

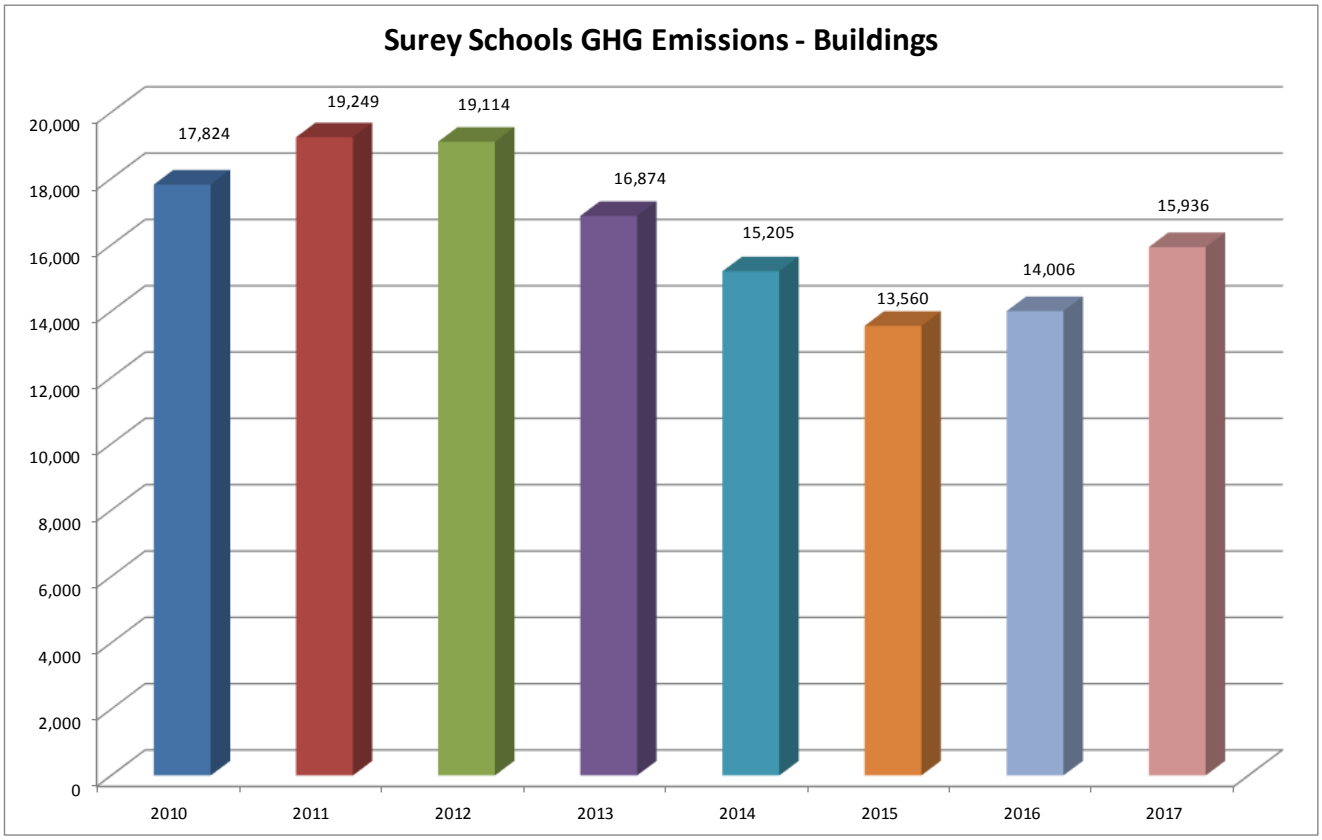
Energy used to heat, cool and power our schools and other buildings continues to be the largest source of emissions for Surrey Schools (87.5% in 2017). Consequently, energy management is our primary strategy for reducing our greenhouse gas emissions. Energy Management is strategically integrated with key departments in the implementation of technical energy efficiency projects. Across the organization, several departments have played a critical role in implementing projects that have resulted in strong energy savings in 2017:

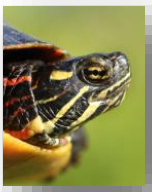
- The District Facilities Centre oversaw numerous energy efficiency projects including:
  - Boiler upgrades at two secondary schools (Princess Margaret & Frank Hurt)
  - LED lighting upgrades at four elementary schools (HT Thrift, Peace Arch, Port Kells, Hjorth Road)
  - Efficiency upgrades in over 90 portables—heating plant, envelope and/or LED lighting upgrades (various sites)
  - Automated building controls upgrade at secondary school (Guildford Park)
- The Capital Project Office began construction of Salish Secondary School. With energy modeling and energy efficiency incentives supported by the BC Hydro New Construction Program, Salish Secondary is projected to be 26% more efficient than a typical secondary school. In 2017 the Capital Project Office also initiated energy modeling of two additional new schools: Maddaugh Road Elementary and Grandview Heights Secondary.
- Information Management Services continues to upgrade computing devices to more energy efficient models and manages computer power management software on an ongoing basis.
- Corporate Services continued to purchase Energy Star appliances where replacements were needed.
- Individual schools championed conservation programs such as holiday break shutdowns and the Energy Conservation Cup.



ACTION TAKEN TO REDUCE GREEN-HOUSE GAS EMISSIONS IN 2017

In 2017 Surrey Schools made significant investments in energy efficiency through the capital budget, annual facilities grant, and the support of our conservation partners BC Hydro and FortisBC. Multiple energy efficiency projects, along with the efforts of staff and students in conserving energy on a daily basis, resulted in electricity consumption staying flat in spite of the addition of 43 portables in September 2017 to accommodate new class size & composition as well an influx of new students. Natural gas consumption increased by 14%, largely due to a colder winter in 2017. Propane gas consumption increased by 34% in 2017 compared to 2016 as a result of the 43 additional portables (largely heated by propane) and the colder 2017 winter. Growth and cooler temperatures resulted in an overall increase of 14% in GHG emissions from buildings even after improving the energy efficiency of two secondary school boiler systems in 2017, When weather-normalized, emissions from buildings increased by less than 1% in 2017 in spite of growth, indicating that overall energy efficiency continues to improve.





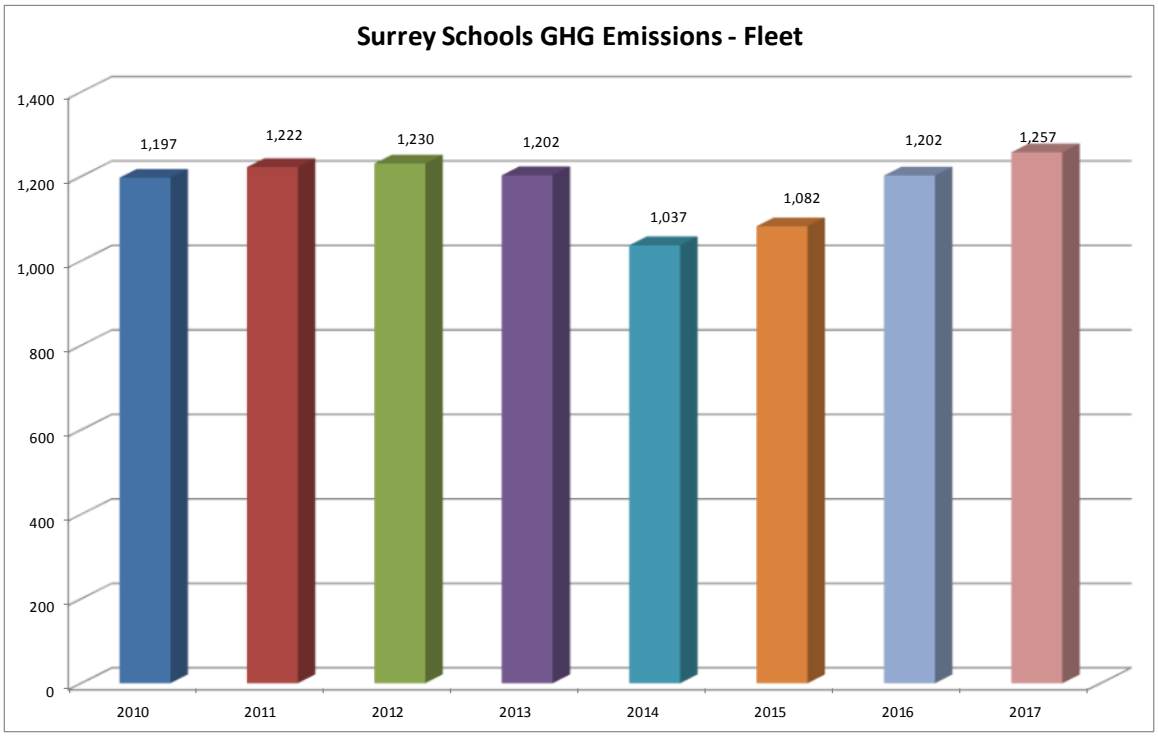
ACTION TAKEN TO REDUCE GREENHOUSE GAS EMISSIONS IN 2017

FLEET

In 2017 Surrey Schools' emissions from fleet vehicles accounted for 6.9% of the district's overall greenhouse gas emissions. Emissions from fleet as a percentage of total emissions has increased since 2010 (5.9%) due to an increase in the number of fleet vehicles combined with a decrease in emissions from buildings.

Total greenhouse gas emissions from fleet in 2017 were 1257 tonnes of CO_2 equivalent (tCO_2e), including 239 tCO_2e from school buses, which are not required to be offset.

In 2017, efforts to reduce greenhouse gas emissions included replacing five fleet vehicles with more fuel efficient models, ensuring quarterly vehicle maintenance for optimal driving performance, and converting bus tires to fuel efficient tires with low rolling resistance. In spite of these measures, overall emissions from fleet increased by 5% due primarily to the addition of three new fleet vehicles for new trades staff and one new school bus route.



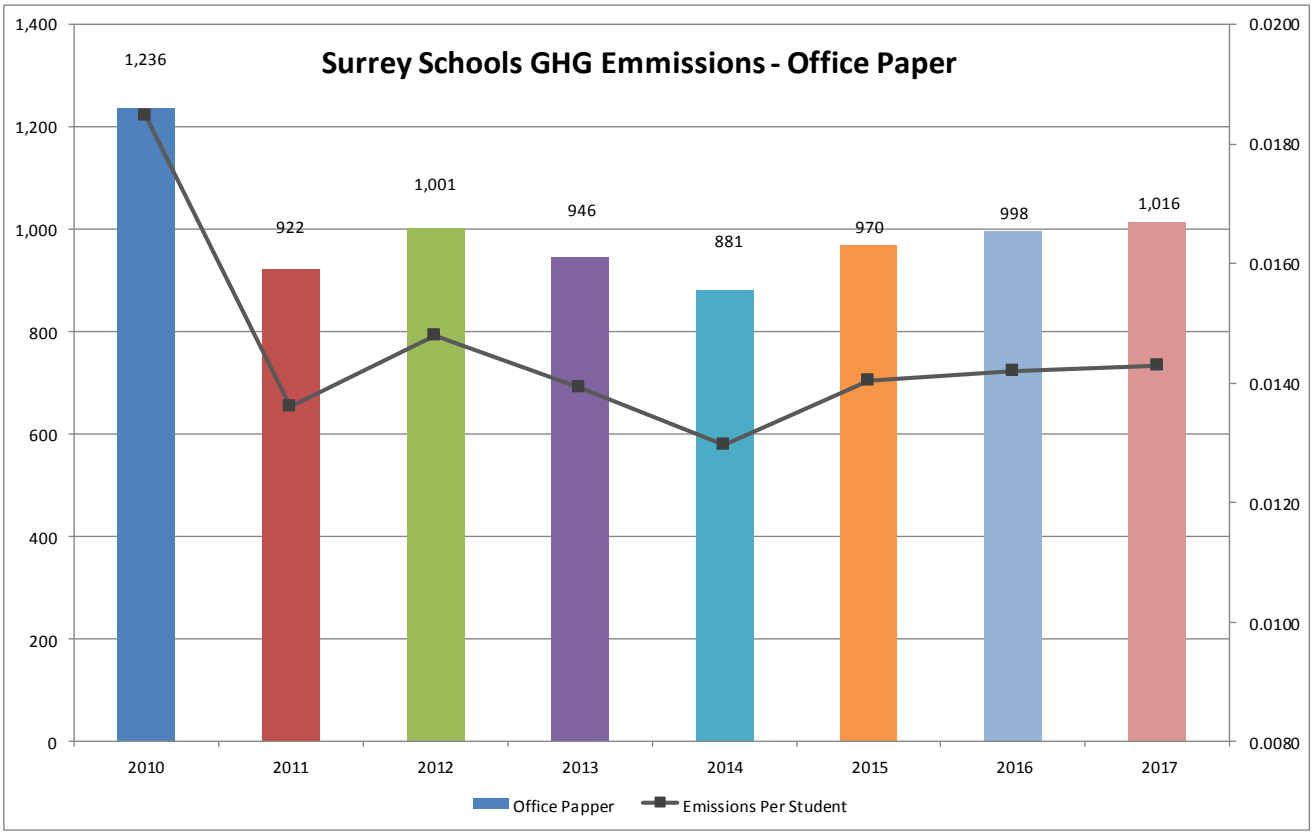


ACTION TAKEN TO REDUCE GREEN-HOUSE GAS EMISSIONS IN 2017

PAPER

In 2017 Surrey Schools' emissions from office paper accounted for 5.6% of the district's overall emissions; a level which has remained relatively constant over the past 6 years. Emissions from paper in 2017 were 1016 tCO_2e. Although emissions from paper increased 2% compared to 2016 paper emissions, overall the district has reduced emissions from paper by 18% from the 2010 baseline .

Surrey Schools' office paper purchasing options include a minimum of 30% recycled content. Efforts to reduce paper consumption in 2017 included Trustees converting to paperless Board Meetings and the creating of an infographic and paper conservation statistics and tips staff to encourage conservation.





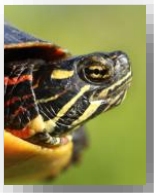
ACTION TAKEN TO REDUCE GREEN-HOUSE GAS EMISSIONS IN 2017

Office Paper—Emissions Per Student

Year	Paper Emissions	Students	Emissions/Student
2010	1,236	66,902	0.018
2011	922	67,792	0.014
2012	1,001	67,699	0.015
2013	946	67,942	0.014
2014	881	67,964	0.013
2015	970	69,136	0.014
2016	998	70,228	0.014
2017	1016	71,089	0.014

After an initial decrease in emissions in 2011, analysis shows that emissions from paper have remained relatively stable in the past 3 years on an emissions per student basis. Campaigns to encourage paper conservation were initiated in 2017 and will continue to expand in future years.





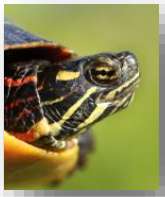
BUILDING A CONSERVATION CULTURE

Surrey Schools is working to create a culture of conservation by engaging staff and students in the district's energy and emissions reduction initiatives. In 2017 staff and students at many schools across the district participated in environmental stewardship initiatives delivered, supported or initiated by the Energy Management and Sustainability program, while many others had school-based green teams and environmental clubs and initiated their school-based environmental stewardship actions.

Students and staff at Surrey Schools are creating a culture that makes energy conservation an everyday activity. Through the district's "Turn it Off Before You Take Off" shutdown campaigns prior to winter, spring and summer breaks, staff and students are proving that with small efforts they can reduce electricity consumption and save money by shutting down equipment when their schools are largely unoccupied.

In 2017 Surrey Schools ran the sixth annual inter-school energy challenge for secondary schools: the Energy Conservation Cup. The schools chose initiatives such as, Ugly Sweater Day, and "unplugged concerts" at lunch and promoted habit-changing actions such as turning off unneeded lights. Sullivan Heights Secondary came out on top as the overall 2017 Energy Conservation Cup winner.





GREEN BUILDINGS

Surrey Schools' new construction projects are built to a higher level of energy efficiency than the standard building code.

Three building sites are LEED (Leadership in Energy and Environmental Design) certified:

- Woodward Hill Elementary (LEED Gold), 6082 142 Street
- District Education Centre (LEED Gold), 14033 92nd Avenue
- Adams Road Elementary (LEED Silver), 18228 68 Avenue

Six sites have been constructed with Energy Efficient Lighting Design:

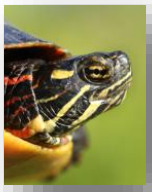
- Katzie Elementary, 6887 194A Street
- Sunnyside Elementary, 2828 159 Street
- Goldstone Park Elementary, 6287 146 Street
- Fraser Heights Secondary addition, 16060 108 Avenue
- Panorama Ridge Secondary addition, 13220 64 Avenue
- Resource Education Centre, 14123 92 Avenue

Three new schools at various stages of development are being built with energy efficient and low carbon designs with the support of the BC Hydro New Construction Whole Building Design program. Energy studies have been completed for:

- Salish Secondary, 7278 184 Street (opening Sept. 2018)
- Maddaugh Road Elementary, 19405 76th Avenue (opening Sept. 2019)
- Grandview Heights Secondary, 16987 25th Ave. (opening Sept. 2020)



Photo credit: DGS Construction Company Ltd.



PLANS TO CONTINUE REDUCING EMISSIONS

The largest proportion of Surrey Schools' GHG reduction initiatives will continue to be focussed on energy conservation within our schools and administrative facilities, which are the largest source of GHG emissions in the district.

Surrey Schools will continue to update the district's Strategic Energy Management Plan, including assessing the energy performance of each school or site in the district and identifying opportunities for future energy efficiency projects that will enhance performance and reduce energy consumption of buildings. With many new schools and additions being constructed in the coming years, energy efficiency opportunities are being assessed during the construction design phase, including efforts to select low carbon heating options.

Surrey Schools is continuing to implement the District's comprehensive energy management program and there are number of energy efficiency projects slated for 2018 including:

- Lighting retrofits converting from fluorescent to LED lighting at five schools
- Exterior lighting retrofits at five schools
- Upgrades to heating systems (boiler plants) at the District Facilities Centre and two elementary schools
- Mechanical system upgrades at two elementary schools
- Complete replacement of building automation system at one elementary school
- Energy efficiency modifications to the building automation systems at two elementary schools and the District Education Centre
- Lighting audits at five schools
- Controls recommissioning at seven schools



Photo credit: DGS Construction Company Ltd.



OTHER SUSTAINABILITY INITIATIVES

Surrey Schools will continue to access incentive funding from key energy conservation partners and promote and pursue cost effective energy conservation projects. In addition to energy efficiency projects, Surrey Schools will continue to support school energy conservation through energy conservation campaigns, green teams and district-wide energy awareness programs and competitions.

Surrey Schools' commitment to sustainability goes beyond reduction of greenhouse gas emissions and touches on areas such as waste management, procurement, education and engagement, and others. Below are just a few highlights of our work and upcoming plans in those other areas:

- With an environmental sustainability policy in place approved in 2017 Surrey Schools began to formalize the district's environmental stewardship strategy. An Environmental Sustainability Working Group comprised of all stakeholder groups will provide recommendations for the district's sustainability vision, framework and targets.

- With the Rethink Waste program rolled out across all sites, in 2017 the district began to measure and track amounts of compost and recycling diverted from landfills at each school and district site. In 2018 we look forward to sharing diversion rates and setting targets for waste diversion. Surrey Schools also anticipates launching a district-wide program for battery recycling in 2018.

- Surrey Schools plans to track and benchmark additional resources such as water and office paper. Employees will be engaged through social marketing campaigns to encourage conservation of these resources.

- Surrey Schools continues to participate in programs that support active transportation to and from work and school such as Bike to School/Work Week and the City of Surrey sponsored School Travel Planning program.