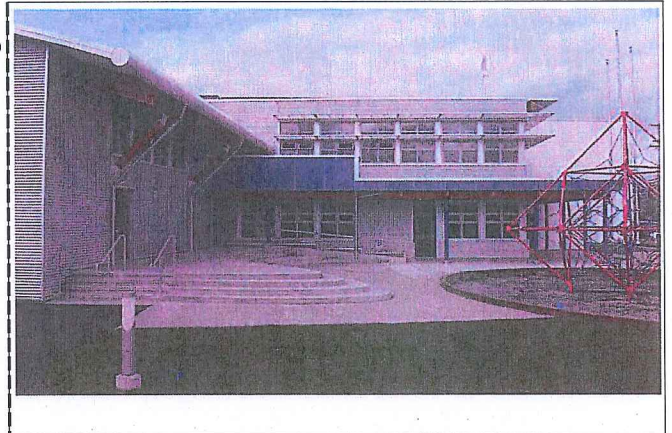


## *2017 Carbon Neutral Action Report*

# *School District No. 63 (Saanich)*

### **Overview**

The Board of Education for School District No. 63 (Saanich) has committed to reducing greenhouse gas (GHG) emissions by 33% by 2020, relative to 2007 levels, and prepare our students to participate in an environmentally sustainable society. Although GHG emissions increased in 2017, the province experienced an abnormally cold winter that caused an increase in natural gas consumption for heating and results were consistent with other school districts. GHG emissions have been reduced by 8.3% overall to the end of 2017, indicating that the District is making progress towards Climate Action goals but must seek additional means of achieving greater GHG emission reductions.



The primary energy conservation activity in 2017 was significant conversion of lighting from fluorescent to LED. While the project was pursued as an energy conservation initiative, recent advances in LED technology have made LED lighting significantly higher quality than the fluorescent lighting being replaced. Numerous staff and students experience negative effects with fluorescent lighting, including headaches and eyestrain. LED lighting eliminates these negative effects. The improvement in light quality of LED relative to fluorescent was leveraged to reduce overall light levels while simultaneously improving comfort levels for staff and students. A review of lighting in retrofitted spaces was also performed to disconnect unnecessary lighting, improve control of lighting, or reduce excessive lighting at the same time as the conversion to LED was implemented. This additional effort to match light levels to the requirements of the space improved the financial savings of the LED lighting to a 3.5 year payback. The conversion of all remaining fluorescent lighting to LED is expected to be complete in 2019.

Advanced Lighting and HVAC (Heating, Ventilating, and Air Conditioning) controls are being introduced to control lighting, heating and ventilation with the same device. As the cost of these devices decline and performance improves it is anticipated that it will become cost-effective to control lighting, heating and ventilation in all spaces based on occupancy, resulting in substantial GHG emission reductions. Schools are characterized by extended periods of low occupancy, such as non-instructional days, school breaks, summer and evenings where students are absent but some staff are present, requiring buildings be heated and ventilated to occupied levels even though occupancy is very low. Information on specific spaces which are unoccupied during these times would allow lighting, ventilation and heat to be reduced, but quickly turned on automatically when someone enters the space. Analysis of the potential savings of this technology was performed in 2017, and savings of approximately 15% are indicated based on current occupancy patterns in the school. Six

spaces were retrofitted in 2017 as a pilot for this technology and results were both successful and cost-effective, averaging a 3.8 year payback, although the easiest spaces to control were selected for the pilot. Expansion of this program will continue in 2018 and 2019 as the technology improves to allow larger or more complicated spaces to be treated. Advanced Lighting and HVAC Control has the potential to close much of the gap between current GHG emissions and the District's GHG emission reduction target.

**Declaration Statement:**

This Carbon Neutral Action Report for the period January 1<sup>st</sup>, 2017 to December 31<sup>st</sup>, 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.

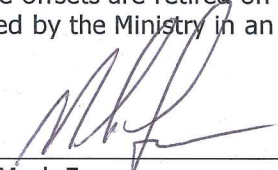
By June 30, 2018 School District No. 63's final Carbon Neutral Action Report will be posted to our website at [www.sd63.bc.ca](http://www.sd63.bc.ca).

**Emissions and Offsets Summary Table:**

School District No. 63 GHG Emissions and Offset for 2017 (tC02e)	
<b>GHG Emissions created in Calendar Year 2017</b>	
Total Emissions (tC02e)	1999 tonnes
Total Offsets (tC02e)	1597 tonnes
<b>Adjustments to GHG Emissions Reported in Prior Years</b>	
Total Emissions (tC02e)	0 tonnes
Total Offsets (tC02e)	0 tonnes
<b>Grand Total Offsets for the 2017 Reporting Year</b>	
Grand Total Offsets (tC02e)	1597 tonnes

**Retirement of Offsets:**

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, School District 63 (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.

  
Mark Fraser  
Assistant Superintendent

  
Date

# Part 1: CNAR Survey

## 1. General Information

Name: Trevor Billy

Contact Email: tbilly@sd63.bc.ca

Organization Name: School District 63 (Saanich)

Sector: School District

## 2. Stationary Sources (eg. Buildings, Power Generators): Fuel Combustion, Electricity use, Fugitive Emissions.

During 2017, did your organization take any of the following actions to support emissions reductions from buildings? (please select all that apply)

Conducted an energy audit/study of building(s) in the organization's portfolio.; Performed energy retrofits of the organization's building(s)

If you selected "*Performed energy retrofits of the organization's building(s)*":

How many buildings were retrofitted?: 16

If you selected "*Built, or are building new LEED Gold or other "Green" buildings*":

How many new "Green" buildings?:

Did your Organization perform any retrofits during 2017? Please describe briefly:

The District performed significant retrofits of lighting from fluorescent to LED. Also, lighting controls were installed to reduce lighting hours, controls on ventilation fans installed to reduce excessive ventilation, and some unnecessary lighting was disconnected. The improvement in light quality with LED was used as an opportunity to reduce the overall amount of light for additional energy savings.



## 2a. Stationary Sources (eg. Buildings, Power Generators): Fuel Combustion, Electricity use, Fugitive Emissions.

Please briefly describe your organization's plans to continue reducing emissions from its stationary sources:

### a) Over the next 1-5 years

The complete conversion to LED lighting is expected in two years. Also, Advanced Lighting and HVAC controls are starting to be installed to simultaneously control both lighting and HVAC systems. When rooms become unoccupied during scheduled hours, both lighting and ventilation will be turned off for energy savings. This technique will be most useful for rooms with unpredictable occupancy, such as washrooms, multipurpose rooms, gymnasiums and staff rooms.

### b) Over the following 6-10 years

An upgrade of major mechanical systems and some building envelope improvements.

## 3. Mobile Sources (Vehicles, Off-road/portable Equipment): Fuel Combustion:

During 2017, did your organization take any of the following actions to support emission reductions from its mobile sources? (please select all that apply)

None of the above

If you selected "*Replaced existing vehicles with more fuel efficient vehicles (gas/diesel)*":

How many vehicles?:

If you selected "*Replaced existing vehicles with hybrid or electric vehicles*":

How many vehicles?:

## 3a. Mobile Sources (Vehicles, Off-road/portable Equipment): Fuel Combustion:

Please briefly describe your organization's plans to continue reducing emissions from its mobile sources:

**a) Over the next 1-5 years**

Route planning software to minimize driving distance and time (and corresponding fuel consumption)

**b) Over the following 6-10 years**

Review the business case for electric vehicles.

## 4. Supplies (Paper): Indicate which actions your PSO took in 2017:

During 2017, did your organization take any of the following actions to support emissions reductions from paper supplies? (please select all the apply)

None of the above

If you selected "*Had a policy requiring the purchase of recycled content paper*":

State the required recycled content here (30%, 50%, 100%):

If you selected "*Had a policy requiring the purchase of alternate source paper (bamboo, hemp, wheat, etc)*", which type of alternate source paper did you use?

Please briefly describe your organization's plans to continue reducing emissions associated with its office paper use in future years.

Include paper reduction, printing double-sided in behavioural campaigns and review a recycled content policy.

## 5. Other Sustainability Actions

### a) Business Travel

During 2017, did your organization take any of the following actions to support emissions reductions from business travel? (please select all that apply)

None of the above

### b) Education/Awareness

During 2017, did your organization have any of the following programs or initiatives to support sustainability education and awareness? (please select all that apply)

A Green, Sustainability or Climate Action Team; Supported or provided education to staff about the science of climate change, conservation of water, energy and/or raw materials

5a) Other Sustainability Actions - Other? Please specify:: Active behavioural campaigns with school green teams to raise awareness of staff and students of actions they can take to minimize energy consumption and GHG emissions.

### c) Other Sustainability Actions

During 2017, did your organization have any of the following programs or initiatives to support sustainability? (please select all that apply)

An operations policy or program to facilitate the reduction and diversion of building occupant waste (e.g., composting, collection of plastics, batteries) from landfills or incineration facilities

5b) Other Sustainability Actions - Other? Please specify:: All major renovations are reviewed with a lens of how will features affect energy consumption.