

2017 Carbon Neutral Action Report

Burnaby School District

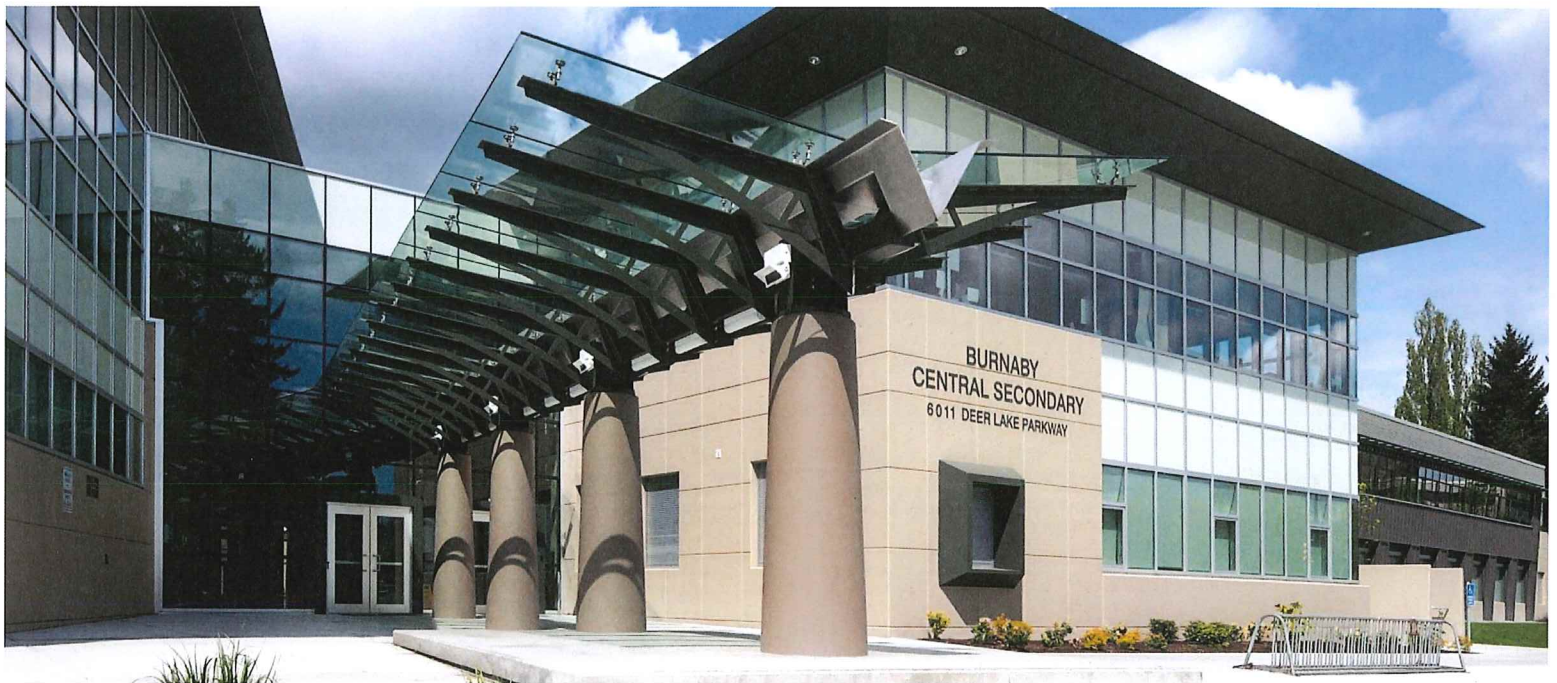


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Declaration statement:

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 the Burnaby School District's final Carbon Neutral Action Report will be posted to our website at www.burnabyschools.ca

Overview

The Burnaby School District continues to forge ahead with its longstanding energy efficiency and emission reduction program, which first began in 2008. During 2017, we continued to follow our long term strategic plan to upgrade our facilities. These projects include lighting retrofits, boiler replacements, EV charging station installation, building automation controls, and water conservation efforts.

Similar to many organizations, the school district's biggest source of emissions is the burning of natural gas for space heating. We have found the most impactful way to address this is through boiler system retrofits, which have multiple benefits, not the least of which is lowered emissions. To this end the district continues to identify, plan, and implement a wide array of energy efficiency projects year after year.

While addressing direct emissions through conservation measures is one focus, the district continues to promote sustainability initiatives in a wide array of areas. These range from energy conservation, through to comprehensive recycling programs, and educational initiatives. Education is and always will be our most important tool to create a better tomorrow.

Environmental policy

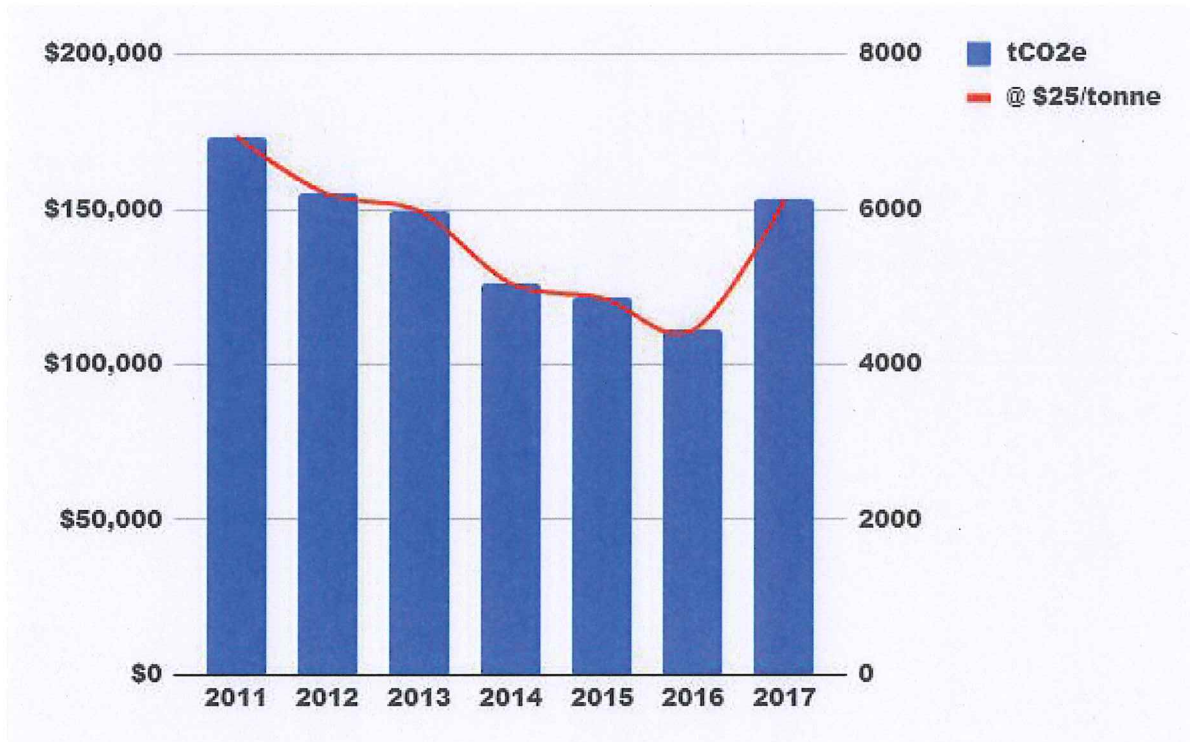
SD41 strives to be a leader in the educational sector and was one of the first to implement an official Environmental Sustainability Policy in 2010 which states:

"The Board acknowledges that Environmental Sustainability is a joint responsibility of trustees, students and staff and is committed to sound practices that focus on minimizing pollution and refuse, reducing energy use and water consumption, and promoting a healthy environment for students and staff within the limited financial resources available.

The Board supports the development and delivery of educational programs that promote Environmental Sustainability.

The Board supports a systematic approach to energy management, including assessing performance, setting goals, creating an action plan, tracking performance, and communicating results.

Emissions year over year



| Year | tCO2e | @ \$25/tonne |
|------|-------|--------------|
| 2011 | 6941 | \$173,525 |
| 2012 | 6196 | \$154,900 |
| 2013 | 5977 | \$149,425 |
| 2014 | 5040 | \$126,000 |
| 2015 | 4854 | \$121,350 |
| 2016 | 4442 | \$111,050 |
| 2017 | 6131 | \$153,275 |

Actions taken in 2017

- In 2017, we continued to implement our natural gas conservation projects with seven state of the art boilers installed across two sites. These two sites are Lyndhurst Elementary and Alpha Secondary. Part of these upgrades included the installation of energy efficient pumps with variable speed drives, making for a much more efficient system. These heating projects have multiple benefits, from increased comfort levels in the buildings, to considerably lower gas costs, as well as decreased carbon emissions.
- A multi-year project to convert exterior lighting to LED is nearing completion with over 35 sites converted to date.
- A DDC controls upgrade at Burnaby South was started and we will be seeing savings in both electrical and gas consumption through the use of motion detectors in the classrooms connected to the lighting and HVAC.
- During 2017, we installed numerous new electric vehicle charging stations with funding through Plugin BC.
- 2017 also saw the beginning of LED interior retrofit projects, with a number of gyms and common areas converted and more planned for the coming year.

Looking Forward

- Our upcoming summer project list is partially funded through the Carbon Neutral Capital Projects, with four new boilers going into South Slope Elementary, and four more at Cascade Heights Elementary. This will include boiler and pump upgrades with energy efficient variable speed pumps.
- The largest boiler project will take place this coming summer at Cariboo Hill Secondary, with new state of the art full condensing boilers replacing the existing units.
- Plans are in place to convert the interior of two elementary schools to LED fixtures.
- The common areas and gyms of three high schools will be upgraded to LED.
- Continue to install electric vehicle charging stations, with current plans to complete 16 stations by mid 2019.
- Integrate two electric vehicles into our maintenance fleet.
- The energy management team, including our educational leaders, will continue to encourage and support the Burnaby Youth Sustainability Network as one of its main stakeholders in the path to a greener future.

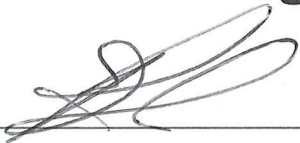
Emissions and Offset Summary Table

| Burnaby School District GHG Emissions and Offset for 2017 (tCO ₂ e) | |
|--|-------|
| GHG Emissions created in calendar year 2017 | |
| Total Emissions (tCO ₂ e) | 5,747 |
| Total Offsets (tCO ₂ e) | 5,739 |
| Adjustments to GHG Emissions Reported in Prior Years | |
| Total Emissions (tCO ₂ e) | 392 |
| Total Offsets (tCO ₂ e) | 392 |
| Grand Total Offsets for the 2017 Reporting Year | |
| Grand Total Offsets (tCO ₂ e) | 6,131 |

Retirement of Offsets

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

Executive sign-off

| | |
|---|----------------------------|
|  | <u>May 09, 2018</u> |
| Signature | Date |
| <u>Russell Harswill</u> | <u>Secretary Treasurer</u> |
| Name (please print) | Title |

Part 1: CNAR Survey

1. General Information

Name: Matt Foley

Contact Email: matt.foley@burnabyschools.ca

Organization Name: Burnaby School District

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?: 9

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:

Two boiler retrofit projects were completed in 2017. Five exterior LED retrofit projects were completed. Two schools had substantial interior LED retrofits.

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

SD41 has a long-running energy management program, and we plan to continue along the path of modernizing our buildings through boiler system upgrades and other HVAC and lighting retrofits. Interior LED Retrofits will be our next main electrical conservation measure, while boiler upgrades will continue at a steady and consistent rate.

b) Over the following 6-10 years

SD41 plans to continue with its program for the foreseeable future. Adopting new technologies and strategies as they arise and continually modernizing our schools in order to provide the best possible learning environment.

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)

Took steps to drive less than previous years

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

SD41 has installed a number of electric vehicle charging stations around the district with partial funding from Plug-in BC, and plan to have a total of 16 stations completed by end of 2019. Plans are in place to purchase two new electric vehicles for use by the maintenance department starting summer 2018

b) Over the following 6-10 years

As technology advances and our fleet ages we will look at best options for converting appropriate vehicles to EV

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)

Had an awareness campaign focused on reducing office paper use; Had a policy requiring the purchase of recycled content paper

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

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

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.

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; Support for professional development on sustainability (e.g. workshops, conferences, training); Supported or provided education to staff about the science of climate change, conservation of water, energy and/or raw materials

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)

A water conservation strategy which may include a plan or policy for replacing water fixtures with efficient models; 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; Green procurement standards for goods (e.g., office furniture, etc.)