



CARBON NEUTRAL ACTION REPORT

**2016 SD 71,
COMOX
VALLEY**

**VANCOUVER
ISLAND, BC**



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APPENDIX A: Greenhouse Gas Emissions Source Report

(Climate Action Secretariat will append to CNAR on June 30th, 2017)





OVERVIEW of GHG Reporting

In 2007 the B.C. Government took a major step in the fight against climate change by setting aggressive greenhouse gas (GHG) reduction targets and making it legally binding. The Greenhouse Gas Reduction Targets Act (GGRTA) established by the B.C. Government sets legislation that all B.C. public sector organizations (PSO) will reduce greenhouse gas emissions. Listed are the targets set for the PSOs and regulated by the Carbon Neutral Government.

- ☐ 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.

To meet legislated targets, all public sector organizations including school districts, are required to be carbon neutral. The phrase “carbon neutral” is a way to explain and take responsibility for the GHGs emitted. As a PSO “adding” GHGs to heat buildings, the emissions can be “subtracted” by purchasing carbon offsets. All public sector organizations follow a five step process to become carbon neutral, and have been doing so since 2010.

School District 71, Comox Valley has implemented these steps to become carbon neutral. The specific actions are: **measuring** operational GHG emissions from district buildings, district vehicles and district wide paper consumption. The second action requires **reducing** emissions where possible through an integrated approach. Thirdly **offset** SD 71 GHG emissions by purchasing an equivalent amount of high-quality, made-in-B.C. carbon offsets. Lastly **report** annually and **verify** data through SMARTTools and the Carbon Neutral Action Report (CNAR). To convert GHG emissions into a unit of measure, BC government uses the application SMARTTools. All PSO enter their data into SMARTTools which then converts this data in carbon dioxide equivalents (tCO₂e).

To become carbon neutral for the 2016 calendar year, SD 71 Comox Valley purchased carbon offsets for 2026 tonnes of carbon dioxide equivalent (tCO₂e) emitted.



ABOUT SD 71, COMOX VALLEY

School District 71 (Comox Valley) is one of 60 school districts in British Columbia. It serves the central Vancouver Island communities: City of Courtenay, Town of Comox and Village of Cumberland, including Black Creek, Merville, Royston, Hornby Island and Denman Island.

QUICK FACTS

Serves 1 Regional District; serves 2 Islands;
serves 3 Municipalities; serves 1 First Nation; and serves 7000 + students

Elementary Schools: Airport, Arden, Aspen Park, Brooklyn, Courtenay, Denman Island, École Puntledge Park, École Robb Road, Hornby Island, Huband Park, Miracle Beach, Queneesh, Royston, Valley View

Secondary Schools: Georges P. Vanier, Highland, Mark R. Isfeld

Other Schools/Programs: Cumberland Community School (K-9), Glacier View Secondary Centre (Alternate Gr. 10-12), International Student Program, Lake Trail Middle School (Gr. 7-9), Nala'atsi Alternate Program, Navigate powered by NIDES

QUICK FACTS

14 Elementary Schools; 2 Junior Secondary schools;
3 Secondary Schools; 3 Alternate Schools; and 1200 FTE and PTE employees

SD 71's Vision and Mission Statement

"A learning community that embraces diversity, honours relationship and prepares all learners for a changing world. Whose mission is to work with our educational partners to develop responsible, compassionate citizens and successful, lifelong learners."

Board of Trustees 2015 - 2018



DECLARATION STATEMENT

This Carbon Neutral Action Report for the period January 1st, 2016 to December 31st, 2016 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2016 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2017 and beyond.

By June 30, 2017 School District 71, Comox Valley's final Carbon Neutral Action Report will be posted to our website at www.sd71.bc.ca.

Compared to past years, SD 71 Comox Valley continues to reduce total Greenhouse Gas emissions. Emissions are still lower than our highest year, 2013 with 2268 tCO₂e. However 2016 at 2026 tCO₂e emitted is slightly higher than 2015.

2013 – 2268 tCO₂e (highest level)

2014 – 2208 tCO₂e

2015 – 1975 tCO₂e (lowest level)

2016 – 2026 tCO₂e





EMISSIONS & OFFSETS SUMMARY

School District 71, Comox Valley

GHG Emissions and Offset for 2016 (tCO₂e)

GHG Emissions created in Calendar Year 2016 (from SMARTTool Homepage):

Total Emissions (tCO₂e)

2031

Total Offsets (tCO₂e)

2026

Adjustments to GHG Emissions Reported in Prior Years (from SMARTTool Homepage):

Total Emissions (tCO₂e)

0

Total Offsets (tCO₂e)

0

Grand Total Offsets for the 2016 Reporting Year (from SMARTTool Homepage):

Grand Total Offsets (tCO₂e)

2026

Retirement of Offsets:

In accordance with the requirements of the Greenhouse Gas Reduction Targets Act and Carbon Neutral Government Regulation, *School District 71, Comox Valley* is responsible for arranging for the retirement of the offsets obligation reported above for the 2016 calendar year, together with any adjustments reported for past calendar years. The Organization hereby agrees that, in exchange for the Ministry of Environment 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

Date: May 24th, 2017

Name: Mr. Dean Lindquist

Title: Superintendent of Schools

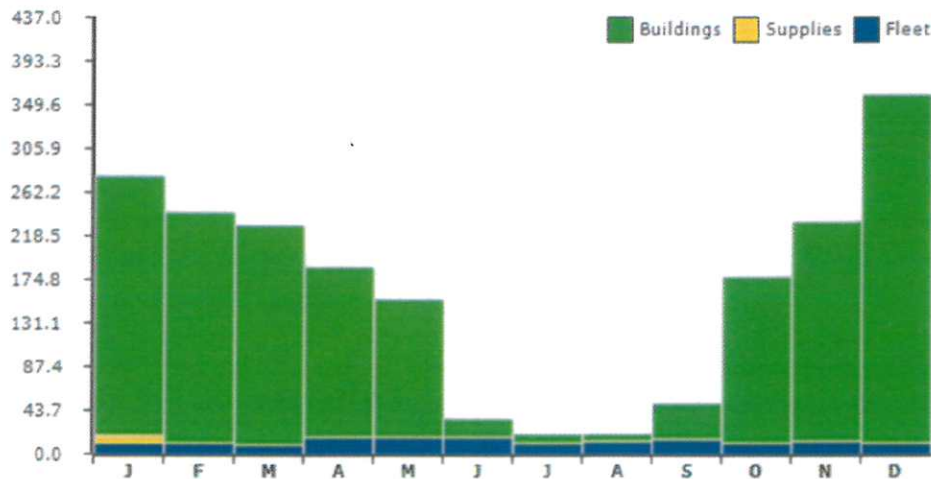
EXECUTIVE SUMMARY

Overview of Key Actions Taken

Throughout SD 71 we are committed to preparing all learners for a changing world. We value healthy living and social responsibility as well as academics. Building on the SD 71 core policies and our successes in GHG reductions since 2010, action to reduce GHG emissions continues. Comox Valley schools have met the challenges of rising heating costs, reduced operation's budget and increased demand on aging facilities. District wide, buildings continue to produce the largest in GHG emissions due to heating and lighting demands. See graph below.

Total Emissions Calendar Year 2016 School District 71 - Comox Valley

Metric tonnes
CO2 equivalent (tCO2e)



Click on the bars to view data for each month

Senior Management has played an active role in seeking out and securing funding opportunities that will result in GHG emission reductions. The two most significant for 2016 are **mechanical and building upgrades**.

- ☐ Lake Trail Middle School Boiler Replacement Project
- ☐ Mark R. Isfeld Gymnasium Lighting Upgrade

Overview of Key Actions Taken

Lake Trail Middle School Boiler Replacement Project

A 2015 Mechanical Feasibility study of Lake Trail Middle School identified that the standard gas fired boilers were inefficient and were close to the end of their expected service life. The report detailed that the old standard efficiency boilers (approximately 50 to 60% efficient) should be replaced by high efficiency boilers to increase student comfort and to reduce natural gas consumption. A high-efficiency natural gas condensing boiler dramatically reduces the natural gas consumption at the school site. The photo below shows the eight Viessmann high efficiency boilers that replaced the three Teledyne boilers in the summer of 2016.



ESTIMATED ANNUAL 60.57tCO₂e or 33% reduction in emissions will occur due to replacement by high efficiency condensing boiler system. This project was partially funded by Carbon Neutral Capital Program funding.



Overview of Key Actions Taken

Mark R. Isfeld Gymnasium Lighting Upgrade

Mark R. Isfeld Secondary school has a successful athletics program with 30 teams that frequently use the gym. The gymnasium is also host to community functions and summer athletic camps. The fluorescent ceiling lighting was replaced with LED lights. **The energy efficient lighting configuration changed from 240 light fixtures to 54 LED fixtures resulting in an 80% reduction in electricity consumed.**

DDC Controls Upgrade

Completed DDC building controls upgrade at Cumberland Community School.

IT Hardware Upgrades

The IT Department continues to replace older computers that draw more power and create more heat with newer units as a part of the district's ongoing technology replacement plan. At the same time replacing older monitors LCD with newer LED monitors resulting in less heat generated and power lost. A CRT monitor needs 110 W to work but the new LED monitors need 17.18 W to work. **This translates to 68% power savings per Energy Star LED monitor.**

Courtenay Elementary Building Envelope Upgrade

Cladding upgrade and replacement at Courtenay Elementary is almost complete. This is integral in maintaining effective building envelope to reduce energy consumption.





EXECUTIVE SUMMARY

Plans to Continue Reducing Emissions

Comox Valley School District will continue to strive towards reducing the GHG emissions. Key strategies include assessing energy performance of each school site, and identifying future energy efficiency projects that will reduce consumption in the district facilities. These assessments will factor in the AFG project planning process, the Long Range Facilities Plan, and Capital project and CNCP funding requests.

Planned energy efficiency projects for 2017/18:

- ☐ Completion of energy efficient LED lighting system at a selection of gymnasiums throughout SD 71. These will include Highland Secondary, Aspen Park Elementary, Brooklyn Elementary, Lake Trail Middle, Cumberland Community School and Queneesh Elementary.
- ☐ Installation of high efficiency boilers at Courtenay Elementary and École Robb Road. Unfortunately, SD 71 did not receive any Carbon Neutral Capital Program funding.

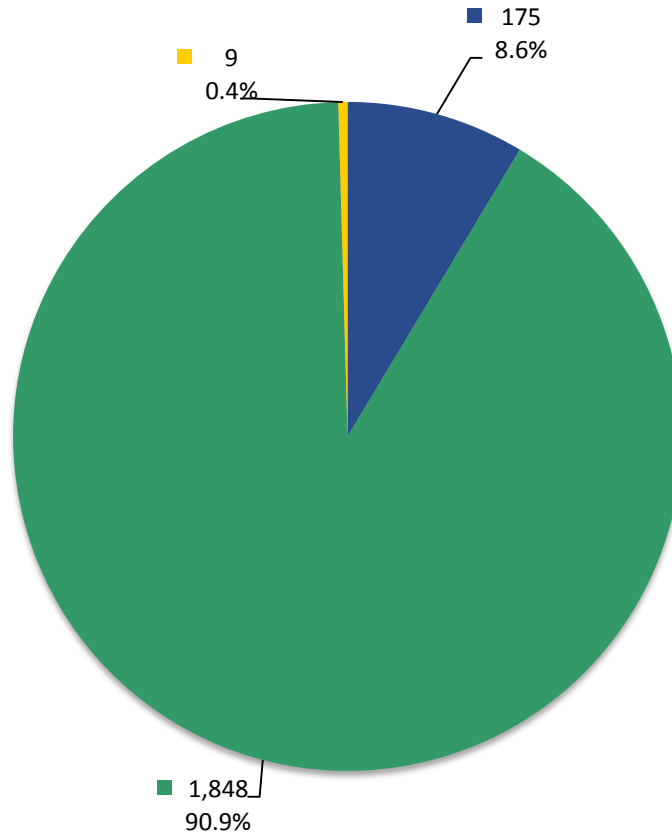
SD 71 Senior Management and teaching staff will continue to support parents and students in their green initiatives throughout the school district and community. Some events are now annual events or have gone from one-day events to week-long celebrations.

- ☐ SD#71 School Community Gardens Conference
- ☐ Earth Week Celebrations at various schools
- ☐ Bike Rodeo and iRide - Bike Skills training program

In summary the largest portion of the School District's greenhouse gas emissions originate from the energy used to heat and power the schools and administration building. As a result the largest GHG reduction initiatives and applications for funding are directed towards reducing energy consumption of buildings.

Throughout BC since 2010, almost half of public sector organizations have achieved a 15 percent reduction in emissions; 16 percent have reduced emissions by approximately 25 percent. School District #71 continues to contribute to the 2050 emission reductions targets set out by BC government.

**School District 71 - Comox Valley
Greenhouse Gas Emissions by Source
for the 2016 Calendar Year (tCO₂e*)**



Total Emissions: 2,031

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion (Building Heating and Generators) and Electricity
- Supplies (Paper)

Offsets Applied to Become Carbon Neutral in 2016 (Generated May 15, 2017 3:48 PM)

Total offsets required: **2,026**. Total offset investment: **\$50,650**. Emissions which do not require offsets: **5** **

*Tonnes of carbon dioxide equivalent (tCO₂e) is a standard unit of measure in which all types of greenhouse gases are expressed based on their global warming potential relative to carbon dioxide.

** Under the *Carbon Neutral Government Regulation of the Greenhouse Gas Reduction Targets Act*, all emissions from the sources listed above must be reported. As outlined in the regulation, some emissions do not require offsets.

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Part One (external)

Contact Name(s):

Ian Heselgrave

Organization Name:

School District 71, Comox Valley

Please select your sector:

- School District

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

During 2016, did your organization take any of the following actions to support emissions reductions from buildings?

Select all that apply

- Performed energy retrofits of the organization's buildings.: Boiler upgrade and LED lighting upgrade.

Briefly describe your organization's plans to continue reducing emissions from its stationary sources in future years.

Continuing to upgrade boilers to high-efficiency boiler systems in the schools. Including LED upgrades to our classrooms and secondary school gymnasiums.

During 2016, did your organization participate in utility-sponsored energy demand management program(s) (e.g. BC Hydro's Energy Management (Manager))?

No

If yes, please describe briefly:

(No response)

2) Mobile Sources (Vehicles, Off-road/Portable Equipment): Fuel Combustion.

During 2016, did your organization take any of the following actions to support emission reductions from its mobile sources?

Select all that apply

- Replaced existing vehicles with more fuel efficient vehicles (gas/diesel).: Continue to upgrade Maintenance Department fleet with fuel efficient trades vans.
-

Briefly describe your organization's plans to continue reducing emissions from its mobile sources in future years.

Continue to review and refine the Vehicle Maintenance and Operations policy. Monitor vehicle operators' idling and choice of route to reduce emissions.

3) Supplies (Paper):

During 2016, did your organization take any of the following actions to support emissions reductions from paper supplies?

Select all that apply

(No response)

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

No plan at this time.

4) Other Sustainability Actions:

Business Travel:

During 2016, did your organization take any of the following actions to support emissions reductions from business travel?

Select all that apply

-
- Encouraged alternative travel for business (e.g. bicycles, public transit, walking)
 - Encouraged or allowed teleworking or working from home
-

Education Awareness:

During 2016, did your organization have any of the following programs or initiatives to support sustainability education and awareness?

Select all that apply

-
- Green, Sustainability or Climate Action Team
-

Other Sustainability Actions:

During 2016, did your organization have any of the following programs or initiatives to support sustainability?

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
 - Other, please describe briefly: Continue to focus on procurement through shared services purchasing. Ex. Janitorial supplies.
-