

2014 Carbon Neutral Action Report (CNAR)
School District #44 - North Vancouver
May 29, 2015



Declaration Statement

This Carbon Neutral Action Report for the period January 1st to December 31st, 2014 summarizes our emissions profile, the amount of offsets purchased to reach net zero emissions, the actions we have taken in 2014 to reduce our greenhouse gas emissions and our plans to continue reducing emissions in 2015 and beyond. By June 30 NVSD's final Carbon Neutral Action Report will be posted to our website at www.nvsd44.bc.ca.

Overview

The North Vancouver School District provides a rich diversity of instruction and programs to inspire success for every student bringing North Vancouver communities together to learn, share, and grow. Our mandate is achieved by the passion of our students and teachers, and by working on the many pillars foundational to the School District's vision, one of which is sustainability.

To further engrain our commitment to sustainability and carbon neutrality, in March 2011, the Board adopted a sustainability policy (*Policy 613*) which outlines that the school district will “*reduce its environmental footprint*”, and the Board will “*integrate economic, environmental, and social considerations into its decision-making.*”

Staying true to the North Vancouver School District motto, ‘The Natural Place to Learn’, the NVSD has been conserving energy and reducing greenhouse gas emissions over the past decade. From winning the BC Hydro Power Smart Partner Excellence award in 2003 to our Energy Conservation Initiative Project in 2005, and with lighting retrofits, mechanical and controls upgrades we have set the groundwork for sustainable reductions in environmental impacts from our educational facilities.

In 2011, NVSD engaged an Energy Manager and created a Strategic Energy Management Plan, outlining the goals, benchmarks, and methods to achieve reductions in energy usage and greenhouse gas emissions related to building operations. The specific goals outline an energy intensity reduction of 13% (14,926 eGJ based on the current area) by June 2016 from 2009/2010 levels. These savings will be made up of approximately 18% reduction in electrical intensity (1,864,275 kWh) and a 10% reduction in fuel intensity (7,753 GJ). For emissions, this is equivalent to 13% or 509 tCO_{2e}.

In 2010, we celebrated the 40th anniversary of the North Vancouver Outdoor School (Cheakamus Center) near Squamish, and in 2012 we opened the new Environmental Learning Centre at the Outdoor School, expanding our environmental sustainability educational offering. This unique LEED Platinum facility will support our social sustainability goals by promoting eco-awareness to students across the lower mainland for years to come.

In more recent years, our focus has been on the completion of LEED targeted Gold buildings, including the School District's new Educational Service Center, Carson Graham Secondary School, Queen Mary Elementary School, and Ridgeway Elementary School. Our ambitious capital replacement program has targeted the replacement of facilities at the end of their life cycle, with new or remodelled facilities constructed with energy efficient mechanical systems and high performance building envelope assemblies.

Proposed changes to our facilities, equipment, and operating procedures are usually evaluated on the basis of their remaining life span as well as their "green" value. However, our pursuit of sustainable building and maintenance practices has also benefited the School District with a reduction in our operating costs. With an eye to the future, our sustainability objectives continue to inspire us to be creative with our limited resources.

Actions Taken to Reduce Greenhouse Gas Emissions in 2014

Initiatives undertaken by NVSD in 2014 to reduce energy consumption and carbon footprint include:

- Completed the recommissioning of control systems at four of the largest sites: Windsor, Handsworth, Seycove, Sutherland secondary schools.
- Completed the boiler upgrades at Larson Elementary. This project was partially funded by CNCP grants and Fortis BC.
- Reviewed controls optimization potential and made HVAC control improvements at 33 sites.
- Behaviour-change program was implemented to encourage energy conservation behaviour among students and teachers;
- Paper usage was reduced, and the procurement of paper with high recycled content was continued
- Encouraged anti-idling and efficient diesel vehicle operation

Operational Changes in 2014

In 2014, operational changes in support of sustainability and GHG reductions included:

- Reviewing DDC control setpoints and identifying opportunities for all elementary schools.
- Continuing the contract with our Energy Manager with BC Hydro support. The Strategic Energy Management Plan developed by the Energy Manager was updated and it will further develop a culture of energy efficiency and sustainability within our organization and provide direction for future programs and projects to reduce energy consumption.


Plans to Continue Reducing Greenhouse Gas Emissions 2015 and Beyond

- In the next year, upgrade mechanical systems and heating plant at Boundary Elementary and the heating plant at Upper Lynn.

- In the next three to five years, our plans include three boiler plant upgrades at Eastview, Blueridge and Dorothy Lynas elementary schools. Upgrades at these 3 sites could save an additional 1300 GJ or 4% of elementary school fuel use.
- Continuing to implement financially viable upgrades to lighting and HVAC systems in all schools based on a 3 year strategic energy management plan. Continue to engage staff and students in behaviour change programs.
- Upgrades to more efficient common area lighting controls (Sutherland and Carson Graham).
- Upgrades to the control system at the North Vancouver Outdoor School to optimize energy usage, and exploring cost effective energy retrofits.
- LED exterior lighting at (Carson Graham, Handsworth, Seycove, Windsor, Mountainside).
- Continue to implement behaviour change programs to encourage energy savings in all areas of the School District.
- Explore envelope and air sealing at multiple locations (Ross Road, Norgate, Boundary and Canyon Heights).

Emissions and Offsets Summary

School District #44 - North Vancouver	
GHG Emissions created in calendar year 2014	
Total Emissions	3,703 tCO ₂ e
Total Emissions for Offsets	3,637 tCO ₂ e
Adjustments to GHG Emissions Reported in Previous Years	
Total Emissions	-2 tCO ₂ e
Total Emissions for Offsets	1 tCO ₂ e
Total Emissions for Offsets for the 2014 Reporting Year (from Offset Invoice):	
	3,638 tCO ₂ e



John Lewis
 Superintendent
 North Vancouver School District #44

Date May 26, 2015

Emissions Breakdown

	Measure	Quantity	CO ₂	Greenhouse Gases in Tonnes				tCO ₂ e ¹
				BioCO ₂	CH ₄	N ₂ O		
Scope 1 (Direct) Emissions								
Mobile Combustion (Fleet)	Litres	70,537.55	167.39	6.12	0.01	0.02		180.07
Stationary Combustion, Reported ³	GigaJoules	62,784.62	3,115.24	0.00	0.06	0.06		3,134.66
Scope 2 (Indirect) Emissions								
Purchased Energy, Reported ³	GigaJoules	37,692.45	182.30	0.00	0.00	0.00		182.79
Scope 3 (Business Travel and Office Paper) Emissions								
Office Paper		33,106.00	205.89	0.00	0.00	0.00		205.89
Total Emissions, Calendar Year 2014			3,670.82	6.13	0.07	0.08		3,703
Carbon Neutral or Offset Exempt			58.83	6.13	0.00	0.00		66
Total for Offsets⁴			3,611.99	0.00	0.07	0.08		3,637

2014 Carbon Neutral Action Report (CNAR) - Part 2 ACTIONS

Organization Name

North Vancouver School District SD44

Actions Taken to Reduce Emissions

1) Stationary Fuel Combustion, Electricity (Buildings): Indicate which actions were taken in 2014:

Performed energy retrofits on existing buildings

Yes

Built or are building new LEED Gold or other "Green" buildings.

Yes

Undertook an evaluation of overall building energy use.

Yes

Please list any other actions taken to reduce emissions from Buildings:

Completed the recommissioning of control systems at four of the largest sites: Windsor, Handsworth, Seycove, Sutherland secondary schools.

Reviewed controls optimization potential and made HVAC control improvements at 33 sites.

2) Mobile Fleet Combustion (Fleet and other vehicles): Indicate which actions were taken in 2014:

Do you have a fleet?

Yes

Replaced existing vehicles with more fuel efficient vehicles (gas/diesel)

No

Replaced existing vehicles with hybrid or electric vehicles

No

Reduced the overall number of fleet vehicles

No

Took steps to drive less than last year

No

Please list any other actions taken to reduce emission from fleet:

(No response)

3) Supplies (Paper):Indicate which actions were taken in 2014:

Used less paper than previous year

No

Used only 100% recycled paper

No

Used some recycled paper

No

Used alternate source paper (Bamboo, hemp, etc.)

No

Please list any other actions taken to reduce emissions from paper use:

(No response)

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Actions Taken to Reduce Emissions - continued

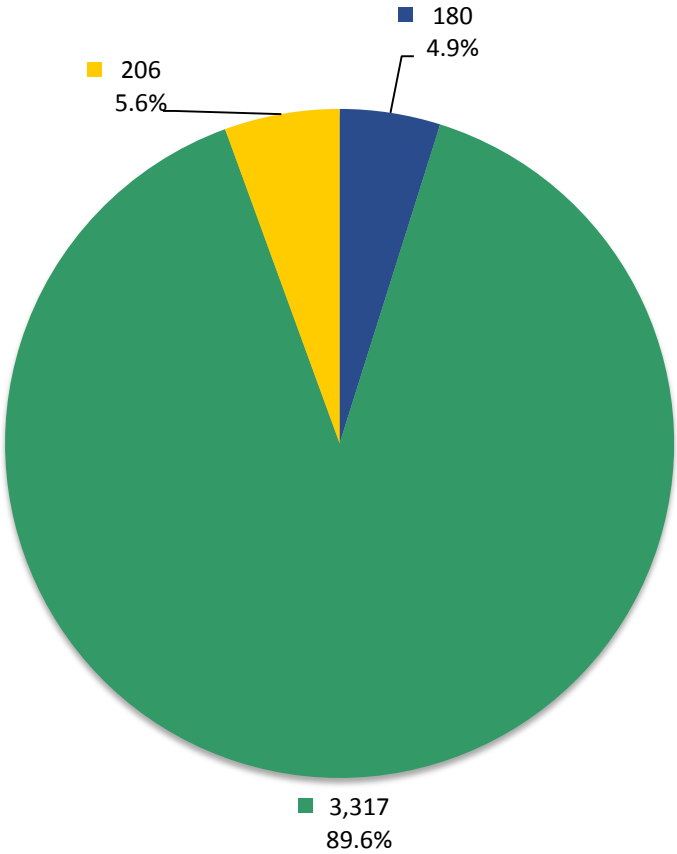
Explain how you plan to continue minimizing emissions in 2015 and future years:

Continuing to implement financially viable upgrades to lighting and HVAC systems in all schools based on a 3 year strategic energy management plan. Continue to engage staff and students in behaviour change programs. In addition new fleet vehicles will be fuel efficient diesel and continued paper conservation measure. The district is also engaged in organic waste collection and many recycling initiatives.

If you wish to list any other "sustainability actions" outside of buildings, fleet, paper and travel check "yes". This reporting is optional.

No

**School District 44 - North Vancouver
Greenhouse Gas Emissions by Source
for the 2014 Calendar Year (tCO₂e*)**



Total Emissions: 3,703

- 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 2014 (Generated June 23, 2015 2:33 PM)

Total offsets required: **3,637**. Total offset investment: **\$90,925**. Emissions which do not require offsets: **66** **

*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.