

# Carbon Neutral ACTION REPORT

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*Overview for 2013*



*This is the 2013 Carbon Neutral Action Report (CNAR) for School District #38 (Richmond). This report contains our 2013 emissions profile, offsets purchased, the actions we have taken in 2013 to reduce our greenhouse gas (GHG) emissions and our plans to continue reducing emissions in 2014 and beyond. A copy of the Richmond School District CNAR can also be located on our website at [www.sd38.bc.ca](http://www.sd38.bc.ca).*

# Executive SUMMARY

On behalf of the Board of Education, School District 38 (Richmond), I am pleased to submit our Carbon Neutral Action Report for 2013. Now in our fourth year of being carbon neutral, energy savings and greenhouse gas emission reductions continue to be a priority in our ongoing commitment towards carbon neutrality. We continue to work diligently, as we have for many years now, to reduce our greenhouse gas emissions while improving the learning environment for students and staff.

In 2013 our greenhouse gas (GHG) reduction initiatives continued to focus primarily on reducing emissions from our largest emissions source: our buildings. The Richmond School District has a robust energy management program with aggressive targets and a forward-looking plan to reduce energy consumed in our buildings. In 2013 we set a target to reduce our natural gas consumption by 5% and our electricity consumption by 3% (despite experiencing electrical load growth) and both of these targets were exceeded.

As part of our 2013 energy conservation program we undertook several projects that have large energy and carbon reduction benefits. We leveraged funding from the Carbon Neutral Capital Program to replace 36 natural gas-fired rooftop units with electric heat pumps; a project which we anticipate will reduce greenhouse gas emissions at Palmer Secondary by 76% and save almost \$20,000 in annual energy costs. We also installed three new high efficiency boilers, upgraded domestic hot water systems and realized significant electricity and natural gas savings at three secondary schools through the first phase of the Continuous Optimization program. In 2013 we also took measures to reduce our emissions from fleet with the purchase of five electric vehicles and removing our three least fuel-efficient vans from the trades' fleet.

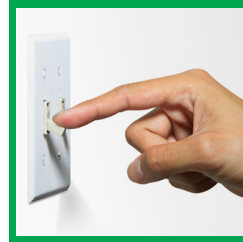


The integration of environmentally sustainable considerations in all of our business decisions is guided by our Board approved Environmental Stewardship Policy. The Richmond School District continues to develop and enhance its focus on sustainability and Environmental Stewardship continues to be one of our four Developmental Objectives. Our commitment to sustainability is underpinned by five principles: collaboration, continuous improvement, commitment to the triple bottom line, leadership and learning for all. We continue to create and support the necessary structures for an integrated, system-wide approach to environmental sustainability through the work of the Richmond Sustainability Action Team (RSAT), four Implementation Committees comprised of representatives from all stakeholder groups, and through the actions of site-based Green Teams. We are making great strides and will continue our efforts to embed sustainability in our educational programming, increase sustainable practices in our operations and educate students and employees to act sustainably.

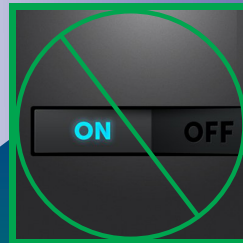
A handwritten signature in black ink that reads "M. Pamer".

Dr. Monica Pamer  
Superintendent of Schools





## RICHMOND SD38 ECO-WISE

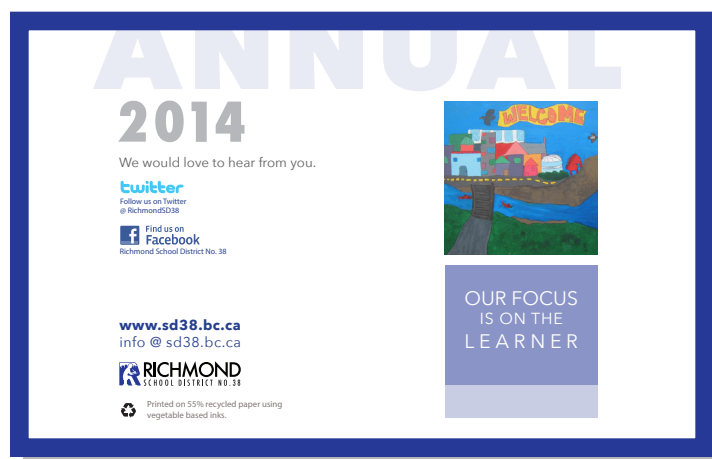


# Make a difference

# 2013 Greenhouse Gas EMISSIONS

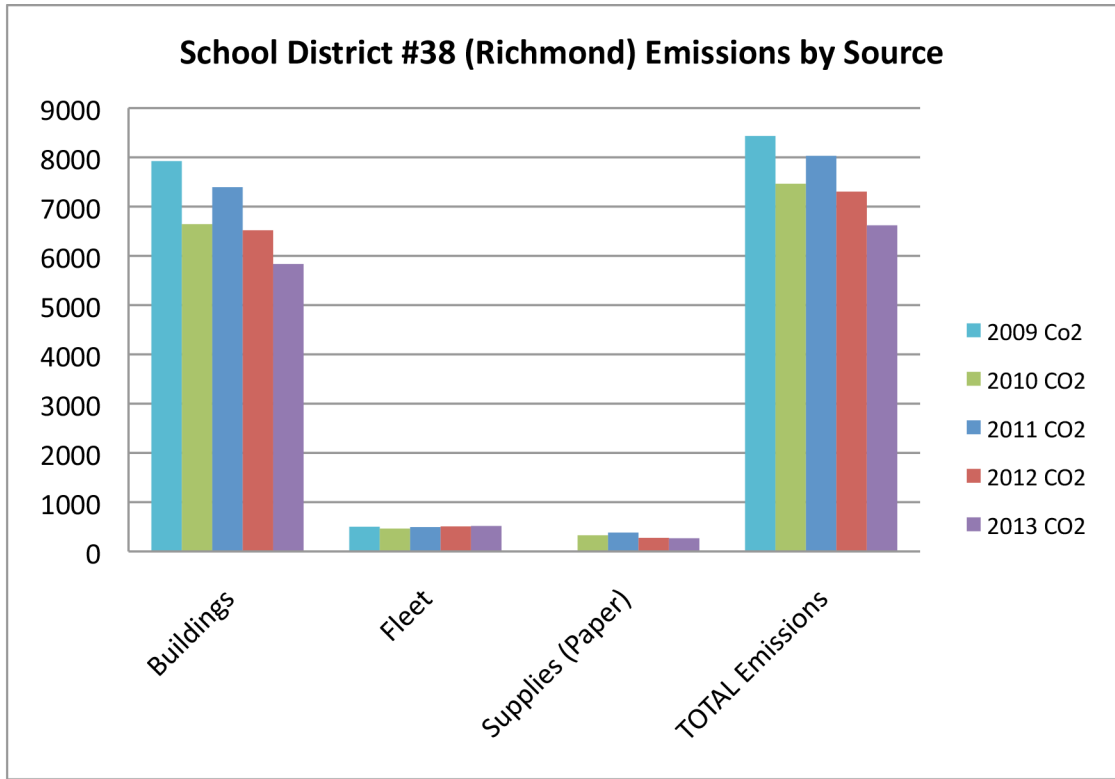
The Richmond School District has calculated our 2013 carbon footprint, in accordance with the Greenhouse Gas Reduction Targets Act, to be 6620 tonnes of CO<sub>2</sub> equivalent.

Emission Source	GHG Emissions (tonnes of CO <sub>2</sub> equivalent)	2013 Results Compared to 2012
<b>Buildings</b>	58350	10.5% Decrease
<b>Fleet</b>	517	1.7% Increase
<b>Paper</b>	268	2.9% Decrease
<b>Total</b>	6620	9.4% Decrease





In 2013 we achieved a reduction of 684 tonnes of CO2 equivalent compared to our 2012 emissions. The graph below shows the district's emission by source over the past five years.



# Buildings

GHG emissions from buildings result from the fossil fuels consumed to provide heating and cooling, ventilation, and electricity to schools and other district facilities. These emissions account for a large majority of the district's overall emissions at 88.1%

# 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 7.8% of the district's overall emissions.

# Supplies

Emissions categorized as supplies are indirect emissions originating from the district's use of office paper and account for 4.0% of the district's overall GHG emissions

# Fugitive Emissions

As outlined in the Carbon Neutral Government Regulation of the Greenhouse Gas Reductions Targets Act, some emissions are out of scope for reporting:

- Gases used for research purposes (e.g. science labs)
- Type R-22 coolant from stationary air conditioning and refrigeration units in schools
- Any emission sources that comprise less than 1% of the district's total GHGs

It was estimated that inscope fugitive emissions (HFCs released to the environment from leaks in cooling equipment) do not comprise more than 0.1% of the Richmond School District's total emissions and an ongoing effort to collect or estimate emissions from this source would be disproportionately onerous. For this reason, emissions from this source have been deemed out-of-scope and have not been included in our total greenhouse gas emissions profile.





# Emissions Reduction ACTIVITIES

Through our 'Eco-Wise' Environmental Stewardship program we continue to work towards embedding sustainability in the day-to-day operations of the district and incorporating Environmental Stewardship into the school curriculum and into the delivery of each employee's core mandates. Our sustainability plan covers eight focus areas: Curriculum Development, Energy Conservation, Grounds Greening, Leadership, Sustainable Purchasing, Sustainable Transportation, Waste Management, and Water Conservation. With the assistance of four Environmental Stewardship Implementation Committees, comprised of representatives from all stakeholder groups, in 2013 we developed a long-term vision and short-term objectives for each of the eight focus areas. We also began implementing the short term objectives in 2013 resulting in some considerable achievements:

- Purchased a total of five electric vehicles in 2013 and removed the three least fuel efficient trades' vans from the fleet. While we have had to increase the overall size of our fleet due to an increased number of staff, we have been able to do so without significantly increasing greenhouse gas emissions.
- Completed a pilot to collect food scraps in schools and launched the district-wide organics collection in our schools. By the end of 2013 organic waste was being separated and diverted from the landfill to become 'class A' compost in eighteen of our facilities.
- Launched an Energy and Water Dashboard individualized for each of our facilities to show them their electricity, natural gas and water consumption, past consumption and benchmarking to other facilities of the same type in the district.
- Implemented 9 new school grounds greening projects creating outdoor learning spaces, including 25 new raised garden beds at schools

- Installed ten new water bottle filling stations to reduce the amount of waste generated by single-use disposable water bottles
- Began to share internal benchmarked paper purchase data, engaging staff to reduce paper consumption

Our carbon neutral objectives and GHG reduction endeavours are inextricably linked to our environmental stewardship initiatives. Of the eight Environmental Stewardship focus areas, Energy Conservation presents the greatest opportunity for both GHG reductions and financial savings given that the largest proportion of the district's greenhouse gas emissions continues to come from buildings. Thus, the largest proportion of our GHG reduction initiatives is focussed on energy conservation within our schools and administrative facilities. In 2013 we reduced our electricity consumption by 4.3% and our natural gas consumption by 7.2% (weather normalized). These reductions, combined with the result of a reduced emissions factor for electricity produced in British Columbia, resulted in an overall reduction of 10.5% in the greenhouse gas emissions from our buildings. These reductions were achieved through a combination of retrofits and equipment renewal, operational changes to ensure energy is being used only when and where it's needed and through behavioural changes made by our building occupants.



# Plans to Continue Reducing Greenhouse Gas EMISSIONS

We are continuing with the District's comprehensive energy conservation program and have a number of energy efficiency projects slated for 2014/15 including:

- 3 boiler replacements
- Upgrades to the building automation systems at four sites
- Replacement and efficiency upgrade of a furnace
- Replacement of domestic hot water boiler system with on-demand hot water system at one school
- Implementation of identified energy conservation measures through the Continuous Optimization program at four sites
- Upgrade parking lot lighting at our Works Yard to LED lighting
- Interior lighting upgrade at two schools
- Continue to tie in corridor lighting to alarm panel so that all interior lighting can be automatically turned off when building security system is armed



## Are you an Energy Star?

# Make a difference



# Achieving Carbon NEUTRALITY

In 2013 we were carbon neutral with respect to our operations for the fourth year in a row. We achieved this through our commitment to reducing energy consumption in our buildings, paper consumption, fleet travel emissions, and by purchasing offsets for the remaining emissions.

In order to become carbon neutral for 2013, the Board of Education of School District 38 (Richmond) purchased carbon offsets from the Pacific Carbon Trust for 6364 tonnes of CO<sub>2</sub>e.

As required by section 5 of the Carbon Neutral Government Regulation, 256 tonnes CO<sub>2</sub>e of emissions resulting from the operation of school buses were reported as part of our greenhouse gas emissions profile in 2013. These emissions from school busses were not offset as they are out- of-scope under section 4(2)(c) of the Carbon Neutral Government Regulation.

## Emissions and Offsets Summary:

<b>Organization X GHG Emissions and Offsets for 2013 (TCO<sub>2</sub>E)</b>	
<b>GHG Emissions created in calendar year 2013 (from SMARTTool Homepage)</b>	
Total Emissions	6620
Total Emissions for Offsets	6364
<b>Adjustments to GHG Emissions Reported in Previous Years (from SMARTTool Homepage)</b>	
Total Emissions	2
Total Emissions for Offsets	2
<b>Credit owing from PCT at end of 2012 reporting year (if applicable – from May 15 Invoice):</b>	
Credit Owing	6491
Total Emissions for Offsets for the 2013 Reporting Year (from Offset Invoice):	(-125)



May 30, 2014

Signature

Date

Monica Pamer

Superintendent of Schools

Name (please print)

Title

# 2013 Carbon Neutral Action Report (CNAR) - Part 2 ACTIONS

Created Monday, March 17, 2014

Updated Tuesday, May 27, 2014

<https://fluidsurveys.com/surveys/cas-z/2013-cnar-form-bps-actions/2b09e9c330e1773e1d28f6a90cb05eae/>

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## Page 1

Please complete the following sections of the 2013 Carbon Neutral Action Report form. Save your work frequently to prevent it from being lost. You can also save a copy for your own use as either a WORD or PDF file using the buttons at the bottom of each page.

This is Part 2 of the Carbon Neutral Action Report form. This section reports on actions taken to reduce emissions during the 2013 calendar year. This information will be included in your final Carbon Neutral Action Report posted on the Ministry of Environment website.

When the form is complete press the submit button on the last page to automatically submit the information to the Climate Action Secretariat (CAS). Do not press submit before you are ready – this may result in a loss of work.

In addition to completing this survey (Part 1 2), you are required to submit your completed Overview (Executive Summary) and Self-Certification Checklist. The 2013 Overview template was included in the email sent and can also be found on the LiveSmart leaders Community.

Please ensure you meet the following reporting deadlines:

A DRAFT 2013 CNAR is due to CAS by March 31, 2014. The draft is comprised of the Overview ONLY (no executive sign-off required).

The FINAL 2013 CNAR is due to CAS by May 30, 2014. The final 2013 CNAR includes Part 1 Part 2 survey form and Overview.

The Self-Certification Checklist is due to CAS by May 15, 2014.

For more information about the Carbon Neutral Government process, please refer to *Becoming Carbon Neutral 2013*, or should you have any questions please contact [climateactionsecretariat@gov.bc.ca](mailto:climateactionsecretariat@gov.bc.ca).



Organization Name

*School District #38 (Richmond)*

## **Actions Taken to Reduce Emissions**

1) Stationary Fuel Combustion, Electricity (Buildings):

Indicate which actions were taken in 2013:

Performed energy retrofits on existing buildings

*Yes*

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

*No*

Undertook an evaluation of overall building energy use.

*Yes*

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

*In addition to completing energy retrofit projects, the Richmond School District also conserved energy through operational and behavioural changes. Operational measures were implemented to reduce the amount of time that energy-using systems are running in buildings (e.g. utilizing building automation systems to refine scheduling of energy using equipment). Behavioural measures engaged building occupants to actively take part in the reduction of energy consumption in our buildings. These programs included: BC Hydro Workplace Conservation Awareness program, Holiday Shut-down Challenge, launch of Energy Dashboard, training session for building service workers, professional development for teaching staff, and a energy conservation presentation at our Eco-Wise Sustainability Kick-Off*

2) Mobile Fleet Combustion (Fleet and other vehicles):

Indicate which actions were taken in 2013:

Do you have a fleet?

*Yes*

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

Yes

Replaced existing vehicles with hybrid or electric vehicles

Yes

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:

*Anti-idling reminders to drivers of fleet vehicles*

### 3) Supplies (Paper):

Indicate which actions were taken in 2013:

Used less paper than previous year

Yes

Used only 100% recycled paper

No

Used some recycled paper

Yes

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

No



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

*Shared benchmarked paper data (packages purchased/student/site) with all sites.*

*Worked with print fleet manager to ensure that MFDs were default to double-sided print. Established a 2013 baseline for prints/student to be shared with each site.*

Actions Taken to Reduce Emissions - continued

Explain how you plan to continue minimizing emissions in 2014 and future years:

*We continue to look for ways to further reduce our greenhouse gas emissions from all three sources: buildings, fleet and paper. With buildings accounting for the majority of our emissions, we will continue to complete energy retrofit projects such as boiler upgrades, separating domestic hot water from heating water and installing on-demand DHW systems and replacing some HID lighting with LED. We will also continue to refine how we operate our buildings with upgrades to building automation systems, better scheduling during closed and/or largely unoccupied periods and programs such as Continuous Optimization. We will also continue to engage our building occupants in conservation initiatives, educating students and teachers on the importance of conservation. For our fleet, we continue to upgrade our fleet with more fuel efficient vehicles, including electric vehicles. We are also looking at opportunities to*

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

Yes

## Actions to Promote Sustainability and Conservation - Optional

The following are actions that fall outside the scope of the *Carbon Neutral Government Regulation*, but which many organizations still undertake and may wish to report on. This section is optional for reporting.

### Business Travel

Created a low-carbon travel policy or travel reduction goal (Low-carbon: Lowest emission of greenhouse gases per kilometre per passenger)

No

### Virtual Meeting Technology

Installed web-conferencing software (e.g., Live Meeting, Elluminate, etc.)

Yes

Made desktop web-cameras available to staff

No

Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)

No

Encourage carpooling to meetings

Yes

### Education and Awareness

Have created Green, Sustainability, Energy Conservation, or Climate Action Teams.

Yes

Provided resources and/or dedicated staff to support these teams

Yes

Provided behaviour change education/training for these teams (e.g., community-based social marketing)

Yes

Established a sustainability/green awards or recognition program

Yes

Support green professional development (e.g., workshops, conferences, training)

*Yes*

Planning for Climate Change

Have assessed whether extreme weather events and/or long term changes in climate will affect our organization's business areas

*No*

Long term changes in climate have been incorporated into our organization's decision making.

*No*



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### Actions to Promote Sustainability and Conservation - Optional (continued)

#### Staff Awareness and Education

Provided education to staff about the science of climate change

*Yes*

Provided education to staff about the conservation of water, energy, and raw materials

*Yes*

Provided green tips on staff website or in newsletters

*Yes*

#### Alternate Work/Commuting Options

Allow for telework/working from home

*No*

Staff have the option of a compressed work week

*No*

Commuting by foot, bicycle, carpool or public transit is encouraged

*Yes*

Shower or locker facilities are provided for staff/students who commute by foot or by bicycle

*No*

Secure bicycle storage is provided

*Yes*

#### Other Sustainability Actions

Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models

*Yes*

Put in place a potable water management strategy to reduce potable water demand of building-level uses such as cooling tower equipment, toilet fixtures, etc. and landscape features

*No*

Have put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities

*Yes*

Have implemented a hazardous waste reduction and disposal strategy (Hazardous Waste: E.g., electronics including computer parts and monitors, batteries, paints, fluorescent bulbs)

*Yes*

Have incorporated minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)

*No*

Established green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)

*No*

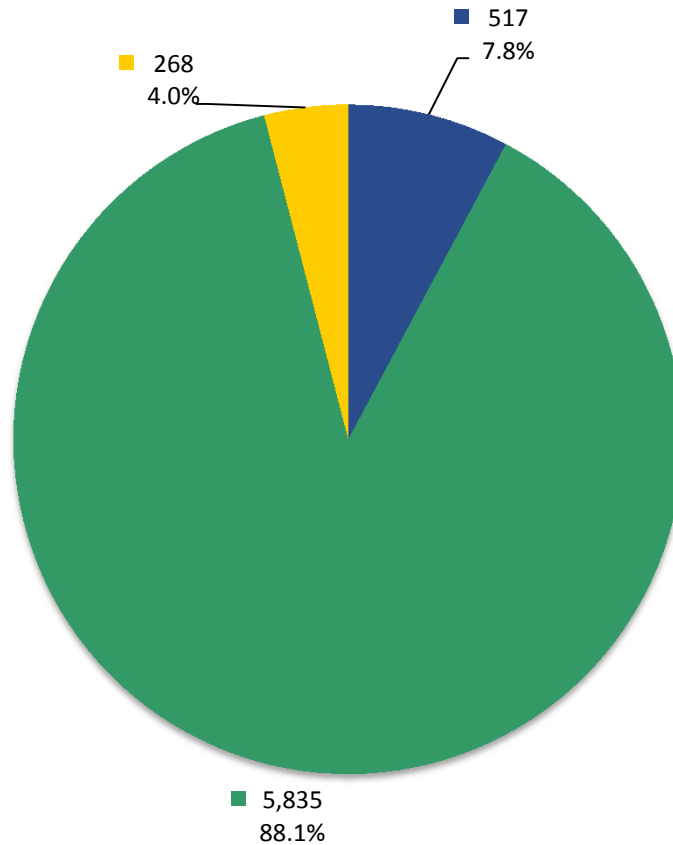
Incorporated lifecycle costing into new construction or renovations

*Yes*

Please list and other sustainability actions you wish to report not included in the previous list.

*(No response)*

# School District 38 - Richmond Greenhouse Gas Emissions by Source for the 2013 Calendar Year (tCO<sub>2</sub>e\*)



**Total Emissions: 6,620**

- 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 2013 (Generated May 21, 2014 3:37 PM)

Total offsets required: **6,364**. Total offset investment: **\$159,100**. Emissions which do not require offsets: **256** \*\*

\*Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) 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.