



# 2014

## Carbon Neutral Action Report School District #71, Comox Valley



Today's Learning  
for Tomorrow's World



School District 71 (Comox Valley)  
<http://www.sd71.bc.ca>



## Table of Contents

Declaration Statement .....	pg.2
• Executive Sign – off	
Overview Summary .....	pg.3
Emissions & Offset Summary Table .....	pg.5
• Statement of 2014 Greenhouse Gas Emissions	
• Adjustments to Total Emissions Reported in Prior Years	
• Total Emissions for Offsets for the 2014 Reporting Year	
• Executive Sign – off	
Emissions Reduction Activities .....	pg.6
Planned Emission Reduction Activities 2015 – 2020 .....	pg.8
CNAR Survey, Part 2 Actions (Appendix A – submitted by CAS)	



*Grade 2, École Puntledge Park student Sun Art*

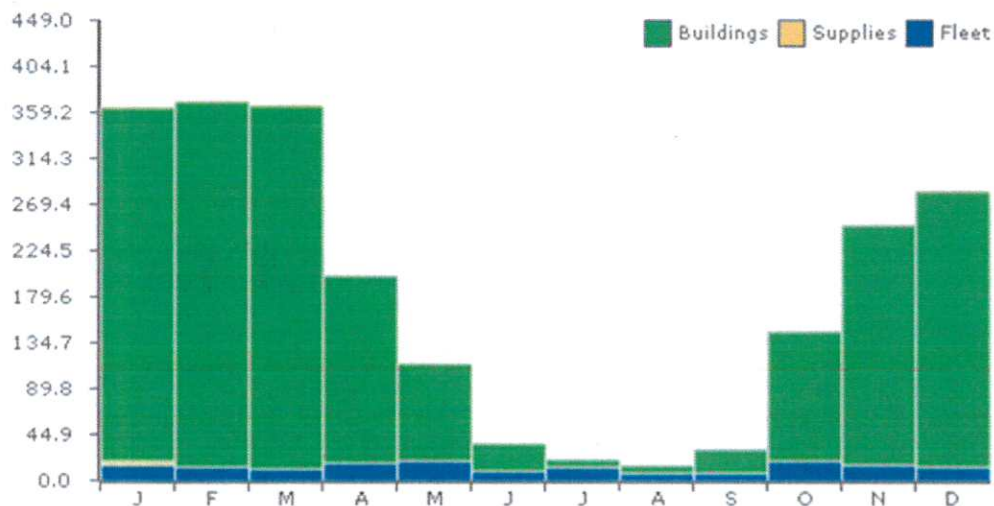
## Declaration Statement

This *Carbon Neutral Action Report* for the period January 1<sup>st</sup> to December 31<sup>st</sup>, 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<sup>th</sup>, 2015 School District 71, Comox Valley's final *Carbon Neutral Action Report* will be posted to our website at [www.sd71.bc.ca](http://www.sd71.bc.ca)

### Total Emissions Calendar Year 2014 School District 71 - Comox Valley

Metric tonnes  
CO2 equivalent (tCO2e)



Click on the bars to view data for each month

Signature: \_\_\_\_\_

Name (printed please): Sherry Elwood

Title: Superintendent

Date: \_\_\_\_\_

## Executive Summary

School District #71, Comox Valley proudly submits the Carbon Neutral Action Report for 2014 to the Climate Action Secretariat for review.

Some of the **key actions** SD #71 have taken to reduce GHG emissions for 2014:

### Mechanical and Building Upgrades

- Completed Mechanical Feasibility studies on 5 sites (G.P Vanier, Courtenay El., Royston El., Lake Trail Middle, and Cumberland Junior to determine GHG emissions savings if a complete HVAC upgrade were to occur in those schools.
- Miracle Beach Elementary HVAC system upgrade.
- Upgrades to building control systems.
- Building envelope improvements.

### Behavior and Cultural Change

- Expanded Student Travel planning program to three more elementary schools in our district. This program engages all stakeholders to encourage families to actively commute to school. Resulting in more students being physical in the morning, ready to learn and less car emissions. Schools report a consistent increase of bikes in school yard racks.
- Completed the first phase of the Cumberland Community Campus. This project joined the two schools sites together by turning the road in between them into walking paths, playground, bus turn around and a drop and go spot. There has been a reduction in vehicular traffic to the campus making it safer and better air quality for students.
- Supporting student and teacher lead initiatives in individual schools like Plant a Tree at Huband Park El., Power Down Day at G.P. Vanier and Mark Isfeld Secondary.

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.

Plans to continue to reduce emissions

We are excited to build on the SD#71 core policies and our successes in GHG reductions since 2011.

Angela Holmes  
Sustainability Coordinator  
School District #71, Comox Valley





*Huband Park Elementary student proudly planted a Cedar Tree*

## Emissions and Offset Summary Table

School District #71, Comox Valley GHG Emissions and Offsets for 2014(TCO2E)

GHG Emissions created in calendar year 2014 (from SMARTTool Homepage):	
Total Emissions (TCO2E)	2,240
Total Emissions for Offsets (TCO2E)	2,206
Adjustments to GHG Emissions Reported in Previous Years (from SMARTTool Homepage):	
Total Emissions (TCO2E)	32
Total Offsets (TCO2E)	34
Total Emissions for Offsets for the 2014 Reporting Year (from Offset Invoice):	
Total Offsets (TCO2E)	2240

Signature: \_\_\_\_\_

*Sherry Elwood*

Name (printed please): Sherry Elwood

Title: Superintendent

Date: \_\_\_\_\_

*May 25, 2015*

## Emission Reduction Activities

The following is a summary of the 2014 activities and projects SD#71 completed or continued.

### IT Hardware - District Wide Upgrades:

- Completed the upgrades at 13 of 15 elementary schools and have installed thin clients computers for all lab and teacher workstations. These automatically shut off at 5PM if they have not been turned off manually.
- Removed all CRT monitors that remained in these schools and replaced with LCD monitors.
- Powered wireless from a central switch which means no more power bricks in the classrooms powering wireless routers.
- Continue to keep better quality printers and fewer of them. In 2013 printers throughout the district were reduced from almost 400 down to 145 resulting in less paper usage and less electricity consumed.

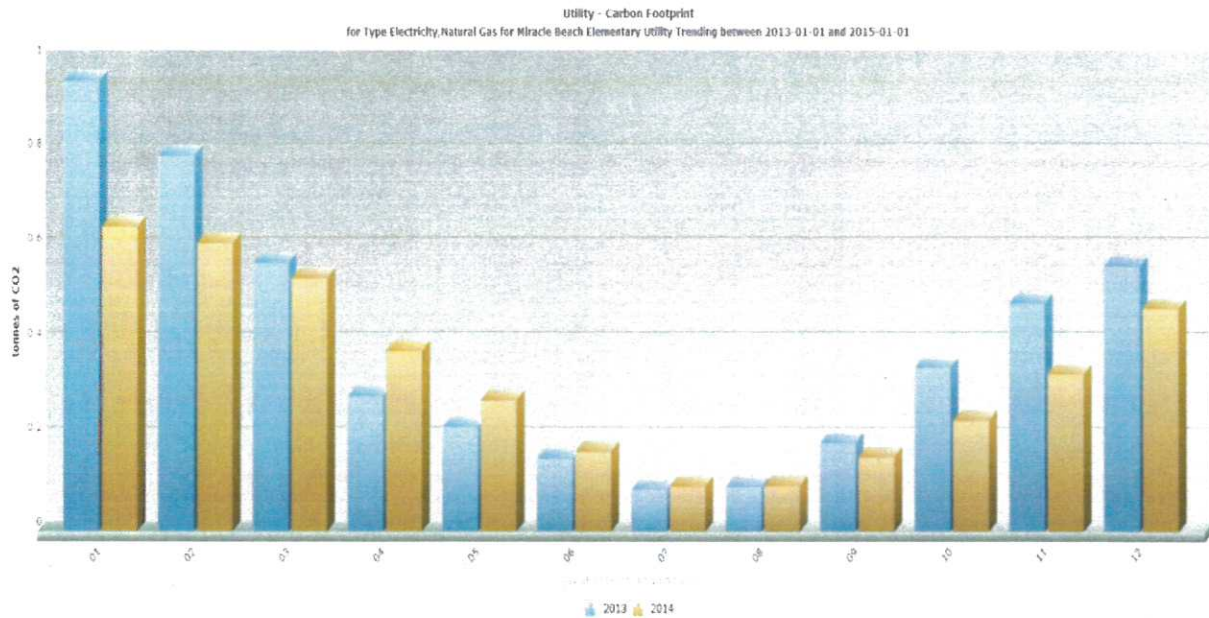
### Building Envelope Upgrades:

- A portion of our capital budget is allotted to window replacements. In 2014 our Maintenance team completed window replacements at Cumberland Campus. Weather stripping renewal and re-caulking of all windows and tilt-up panel joints at Valley View and Brooklyn Elementary rounded out our commitment to GHG emissions savings.

### Mechanical Upgrades:

- Several schools were targeted for Domestic Hot Water tank upgrades to the state of the art condensing technologies. These projects were completed at Lake Trail Middle School, Cumberland Junior, and G.P. Vanier with the help of Fortis BC incentives programs.
- Perhaps the most extensive mechanical upgrade took place at Miracle Beach Elementary in the summer and fall of 2014. The school's original and failing 2 mid-efficiency boilers were replaced with 98% efficient condensing boilers. To maximize the boiler technology an outside air source heat pump was installed. To round off the project, and achieve maximum weekly efficiency, attention and resources were invested in the occupancy control system, Version Delta 3, an automated building control system that is remotely programmed. **Data comparison reveals a 4,000 to 6,000 kWh reduction to previous years in the three months after installation. This equates to a REDUCTION of 1/3 tonne of CO2 over three months that was not emitted into our air. (See following graph)**





In summary, as the Greenhouse Gas Emissions Source Detail Report indicates, it is still essential to focus on energy consumption of our 110,000 square meters of building space as this area is the highest (90.7% of total emissions) emitter of tCO<sub>2</sub>e over Fleet consumption and Paper consumption. (Reference: Green House Gas Emissions by Source Report). We continue to see improvements.

2012 Total Emissions	2013 Total Emissions	2014 Total Emissions
2,509 tCO <sub>2</sub>	2,305 tCO <sub>2</sub>	2,240 tCO <sub>2</sub>



## Planned Emissions Reduction Activities 2015 – 2020

The following is a summary of the planned projects and activities SD#71 intends to incorporate into future district wide operations.

### IT Hardware Upgrades:

As the IT Department moves into the remaining facilities, they will be installing about 650 Thin Clients computers and replacing all CRT monitors with LCD.

### Behavior and Cultural Shift:

SD #71 will continue to engage youth in sustainability projects, awareness campaigns and events through dedicated sponsor teachers, community garden projects and Earth Day events.



*G.P. Vanier Environmental Club planted Garry Oak tree at school on Earth Day*

A student that develops a sense of belonging and contribution to their school and community creates learners who graduate with an understanding and stewardship of the environment they belong to - both locally and globally.

Sustainability and creating environmental stewards in our students is a key part of the guiding policies of our organization. Creating a **5 year Strategic Sustainability Framework and Plan for SD71**, building on the previous work of Energy Manager in 2011-2013 is the first step.

A major pillar of the plan will be GHG setting and outlining GHG emission reduction targets for 2015 - 2020. In 2015 our Operations Department has already continued the work of previous years and is **implementing GHG strategies like:**

**Mechanical Upgrades** - Royston Elementary will be undergoing a complete boiler refit to high efficiency condensing boilers. This has an expected GHG reduction of 26.35 TONS CO<sub>2</sub>. Each year the aim is to replace at least one school's existing boilers with a high efficiency system. Four schools in SD71 have been targeted for this initiative in future years, with a conservative estimated total of 125.34 TONS CO<sub>2</sub> emissions reduction.

**Domestic Hot Water** - Looking ahead to 2016 the plan is to switch out the existing worst offenders at Courtenay El and NIDES



*The new (AC Smith) and old domestic hot water tanks side by side at Queenesh Elementary*

**Building Envelope** - Continue the previously effective work of replacing windows. The next schools to target are Miracle Beach Elementary and Lake Trail Elementary. Re-caulking of all windows and tilt-up panel joints will be completed at Valley View, Highland, Cumberland and Brooklyn Elementary schools. We will undertake a partial cladding upgrade and replacement at Courtenay Elementary. This is integral in maintaining effective building envelope to reduce energy consumption.



**Occupancy Sensors project** - Throughout the district we will make the switch to overhead classroom occupancy sensors. We hope to reduce the length of time lights are left on in classrooms when no-one is in them. In the fall of 2015 we will begin this project at Huband Park Elementary.

**Utility Data Management** - Continue to improve utility data management processes with a focus on sharing data with administration, senior management, green teams and other building users. This will raise awareness and allow focused efforts to reduce consumption of paper, water, natural gas and electricity.

**Waste Management** - Reducing consumption, reviewing waste and recycling pick-up, working with our waste management partners to stream waste into compostable, cardboard, multi-stream and recycling.



We can do better....



**WE CAN!**





# 2014 Carbon Neutral Action Report (CNAR)

## - Part 2 ACTIONS

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### Organization Name

School District No. 71, Comox Valley

### 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.

No

Undertook an evaluation of overall building energy use.

No

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

1. Completed Mechanical Feasibility studies on 5 sites ( G.P Vanier, Courtenay El., Royston El., Lake Trail Middle, and Cumberland Junior to determine GHG emissions savings if a complete HVAC upgrade were to occur in those schools.

2. Upgrades to building control systems.

#### 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

Yes

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

1. Continuing to see benefits of the GPS Vehicle Tracking system installed in fleet vehicles in 2013. Some benefits are drivers are more aware of their route choices and now plan their work day according to best routes, made drivers aware of idling habits to encourage less idling of more than 10 minutes.
2. Perform regular fleet maintenance by in-house mechanic.
3. Each driver is required to check tire pressure regularly to ensure best fuel economy.
4. Explored partnership with electric car dealership to replace light duty truck with electric vehicle.

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

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:

1. Reviewed procurement practices with paper supplier with the intention of encouraging 100% recycled paper purchases throughout SD71 2016 - 2020.
2. Currently reviewing recycling practices at our 3 schools with the largest populations of staff and students.

### Page 3

## Actions Taken to Reduce Emissions - continued

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

Sustainability and creating environmental stewards in our students is a key part of the guiding policies of our organization. Creating a 5 year Strategic Sustainability Framework and Plan for SD71, building on the previous work of Energy Manager in 2011-2013 is the first step.

A major pillar of the plan will be GHG setting and outlining GHG emission reduction targets for 2015 - 2020. In 2015 our Operations Department has already continued the work of previous years and is implementing GHG strategies like:

1. Mechanical Upgrades - Royston Elementary will be undergoing a complete boiler refit to high efficiency condensing boilers. This has an expected GHG reduction of 26.35 TONS CO<sub>2</sub>. Each year the aim is to replace at least one school's existing boilers with a high efficiency system. Four schools in SD71 have been targeted for this initiative in future years, with a conservative estimated total of 125.34 TONS CO<sub>2</sub> emissions reduction.

2. Throughout the district we will make the switch to overhead classroom occupancy sensors. We hope to reduce the length of time lights are left on in classrooms when no-one is in them. In the fall of 2015 we will begin this project at Huband Park Elementary.

3. Continue to improve utility data management processes with a focus on sharing data with administration, senior management, green teams and other building users. This will raise awareness and allow focused efforts to reduce consumption of paper, water, natural gas and electricity.

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

Yes

#### Page 4

**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)**

Yes

**Encourage carpooling to meetings**

Yes

**Education and AwarenessHave 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)**

No

**Established a sustainability/green awards or recognition program**

No

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

Yes

**Planning for Cimate ChangeHave 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.**

Yes



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

**Staff Awareness and Education** Provided education to staff about the science of climate change

No

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

Yes

**Provided green tips on staff website or in newsletters**

No

**Alternate Work/Commuting Options** Allow for telework/working from home

Yes

**Staff have the option of a compressed work week**

Yes

**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**

Yes

**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

Yes

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

No

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

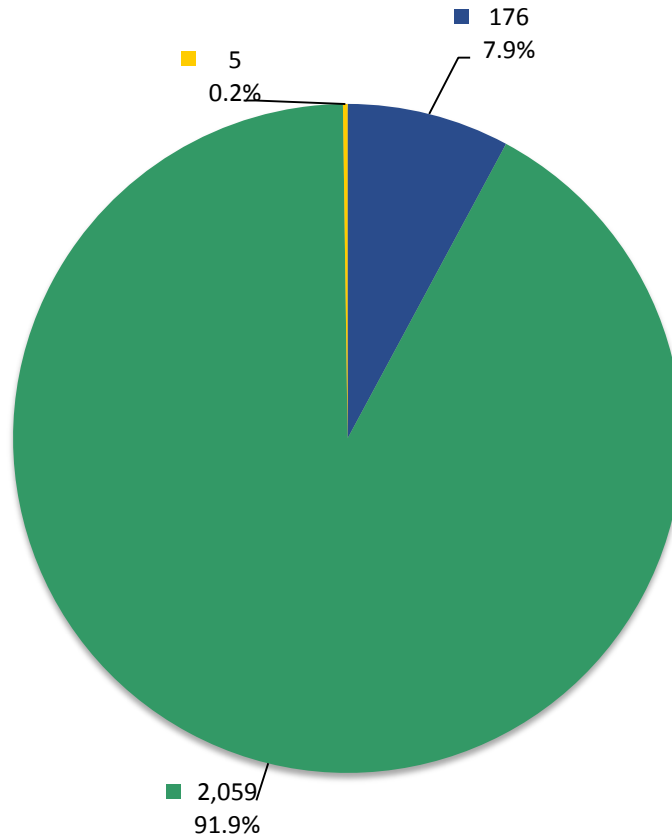
**Please list and other sustainability actions you wish to report not included in the previous list.**

Expanded Student Travel planning program to three more elementary schools in our district. This program engages all stakeholders to encourage families to use active transportation to commute to school. Resulting in more students being physical in the morning, ready to learn and less car emissions.

Completed the first phase of the Cumberland Community Campus. This project joined the two schools sites together by turning the road in between them into walking paths, playground, bus turn around and a drop and go spot. There has been a reduction in vehicular traffic to the campus.



**School District 71 - Comox Valley  
Greenhouse Gas Emissions by Source  
for the 2014 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 2,240**

- 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 3:23 PM)**

Total offsets required: **2,206**. Total offset investment: **\$55,150**. Emissions which do not require offsets: **34** \*\*

\*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.