



2015 CARBON NEUTRAL ACTION REPORT

MAPLE RIDGE - PITT MEADOWS SCHOOL DISTRICT NO.42

EXECUTIVE SUMMARY

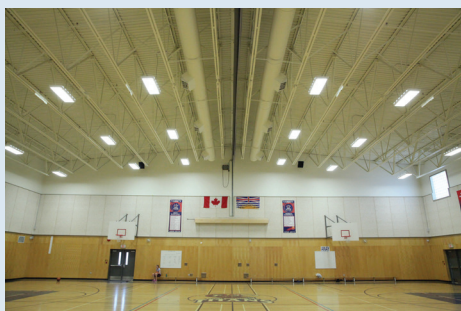


This Carbon Neutral Action Report for the period January 1st, 2015 to December 31st, 2015 summarizes our emissions profile, the total offsets to reach net-zero emissions, the actions we have taken in 2015 to reduce our greenhouse gas emissions, and our plans to continue reducing emissions in 2016 and beyond. By June 30, 2016, Maple Ridge - Pitt Meadows School District 42's final Carbon Neutral Action Report will be posted to our website at www.sd42.ca/sustainability.

On March 25, 2015, the Maple Ridge - Pitt Meadows Board of Education approved the *2015-2019 Energy Management Plan*. This plan includes the implementation of lighting as well as heating, ventilation and air-conditioning (HVAC) upgrade opportunities in all 34 school district facilities. The implementation of all energy conservation opportunities will result in estimated energy savings of 4.44 million kWh and 12,800 GJ and estimated annual utilities cost savings of \$0.50 million that will be re-invested in our schools. The associated greenhouse gas emission reduction resulting from this four year Plan are 758 tonnes of CO₂ emissions. One year into the Plan and we are almost half way to meeting the Plan target of \$0.5 million in ongoing utilities savings.

A handwritten signature in blue ink that reads "Sylvia Russell".

Sylvia Russell, Superintendent of Schools
May 18, 2016



2015 GREENHOUSE GAS EMISSION

The Maple Ridge – Pitt Meadows school district produced a total of 3,289 tonnes of greenhouse gas emissions from all sources as reported in SMARTTool.

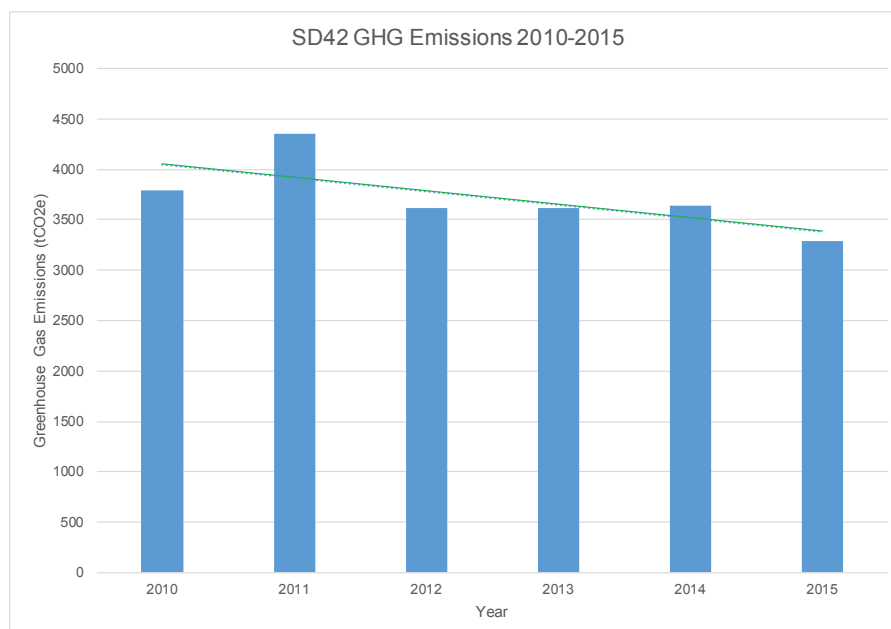
| SCHOOL DISTRICT NO. 42 GHG EMISSIONS AND OFFSETS FOR 2015 (TC02E) | |
|---|-------|
| GHG Emissions Created in Calendar Year 2015 | |
| TOTAL EMISSIONS | 3,287 |
| TOTAL OFFSETS | 3,281 |
| Adjustments to GHG Emissions Reported in Prior Years | |
| TOTAL EMISSIONS | 8 |
| TOTAL OFFSETS | 8 |
| Total Emissions for Offset for the 2015 Reporting Year | |
| TOTAL OFFSETS | 3,289 |

OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2015

Of all the greenhouse gas emissions generated, a total of 3,289 tonnes of emissions offsets have been applied to become carbon neutral for 2015. This total was adjusted by 8 tonnes based on units consumed in 2014 but not reported previously due to billing delays.

EMISSIONS TRENDS

Since 2010, School District 42 has seen a 15% reduction in emissions.





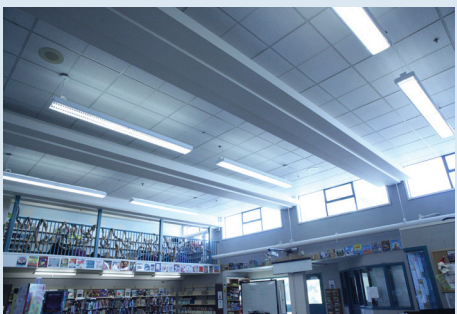
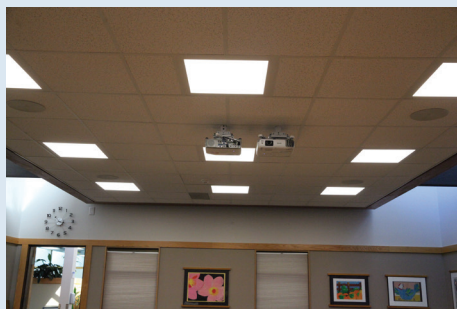
2014/15 RETROFITS

2014/15 projects included Thomas Haney Secondary lighting and HVAC and Webster's Corners' Elementary lighting upgrades that resulted in reductions of 1.3 million kWh, 2,540 GJ and 162 tCO₂e. The estimated ongoing energy savings are \$0.14 million. Additional benefits include improved lighting levels and more consistent lighting.



2015/16 RETROFITS

Since December 2015 lighting upgrades are underway at Samuel Robertson Technical, Harry Hooze Elementary, Yennadon Elementary, Glenwood Elementary, District Education Office and Maple Ridge Annex. A heating, ventilation and cooling upgrade at Samuel Robertson Technical is also underway. These projects will be completed by May 2016. These upgrades will result in reductions of 0.86 million kWh, 1,360 GJ and 91 tCO₂e.



SPOTLIGHT: GYM LIGHTING UPGRADE

The lighting in the Thomas Haney gymnasium has had a dramatic upgrade. The gymnasium used to have 240 2-lamp T8 fixtures in continuous rows. This was a maintenance challenge. After the retrofit, 192 fixtures were removed and the 48 remaining fixtures were upgraded to a 4-lamp T5 high output luminaire with extra long life lamps. This retrofit saves the school district approximately 15,600 kWh in electricity consumption and approximately \$1,500 in ongoing utility cost savings. Additional benefits include improved lighting levels and more consistent lighting. Due to the success of this upgrade, the same retrofit combination will be applied in other school gymnasiums where lighting retrofits are planned.





STAFF ENGAGEMENT HIGHLIGHTS

- On September 22, 2015, all school district custodial staff attended one of two training workshops on the newly approved four year Energy Management Plan. Custodial staff, shown in the above picture, were encouraged to suggest further opportunities for energy savings.
- In the fall of 2015, Senior Team approved the creation of the Environmental Sustainability Committee that will be comprised of seven members: one senior team member, two MRPVPA representatives, two MRTA representatives, the Director of Maintenance and the Manager, Energy and Environmental Sustainability. The purpose of the Committee will be to investigate, promote, advise, recommend and assist in the implementation of measures that will improve the learning environment of students and working environment of staff through the integration of sustainability principles into all school district functions and operations.



STUDENTS POWERING REAL CHANGE

In March 2015, the school district, in partnership with BC Hydro Schools Program hosted an Energy Ambassadors workshop for Thomas Haney teachers and students. Students who participated in the workshop prepared and presented recommendations for energy conservation to the Board of Education. These recommendations included the creation of a school district wide energy conservation event.

In October 2015, the school district organized a month long energy challenge as a result of the Thomas Haney students' recommendations to the Board. This initiative raised awareness about energy conservation in schools by challenging schools to think of unique ways to decrease electricity and natural gas consumption. The winning school, Harry Hooe Elementary, saw a 21% drop in energy consumption and they were presented with a trophy for their efforts.



IN THE NEWS

MARCH 2, 2015

MAPLE RIDGE SCHOOL DISTRICT CELEBRATES GREEN UPGRADES

The Maple Ridge - Pitt Meadows Times featured the Thomas Haney Centre retrofit and the student workshop in a recent article stating: "A new initiative from BC Hydro and School District 42 turns infrastructure upgrades into teachable moments."

JUNE 26, 2015

HAMMOND TURNS OFF LIGHTS

The Maple Ridge - Pitt Meadows News featured the story of a group of Hammond Elementary grade 7 students who showed the school district how it can achieve dramatic energy savings. They conducted a power down day to see how much savings could be achieved by simply turning off lights and other electrical appliances.

"The results were astonishing: 67% reduction in the school's electricity consumption. The school's usage dropped from 600 to 200 kWh, or approximately \$40 in electricity savings, over the course of their power down day."

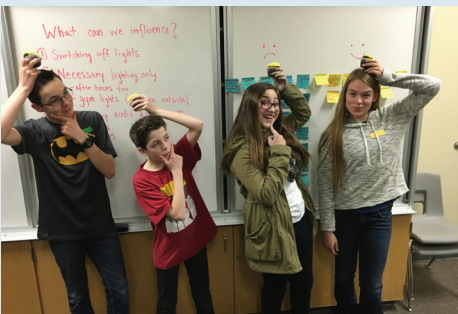
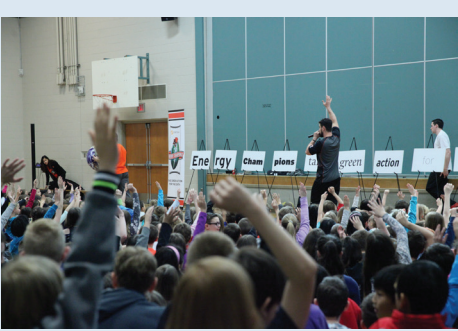
"The students want to do more - they want to do power down day every Friday."

NOVEMBER 10, 2015

ENERGY UPGRADES FOR THREE SCHOOLS

The Maple Ridge - Pitt Meadows News featured a story about the funding received from the Ministry of Education to fund three capital projects: replacement of 46 rooftop heat pumps at Westview Secondary School and two central boiler and domestic hot water system upgrades at Albion Elementary and Fairview Elementary.

"Energy efficiency is the theme as three schools in the Maple Ridge - Pitt Meadows School District received a combined \$846,000 in funding for capital projects."



PLANS TO CONTINUE REDUCING GREENHOUSE GAS EMISSIONS IN 2016

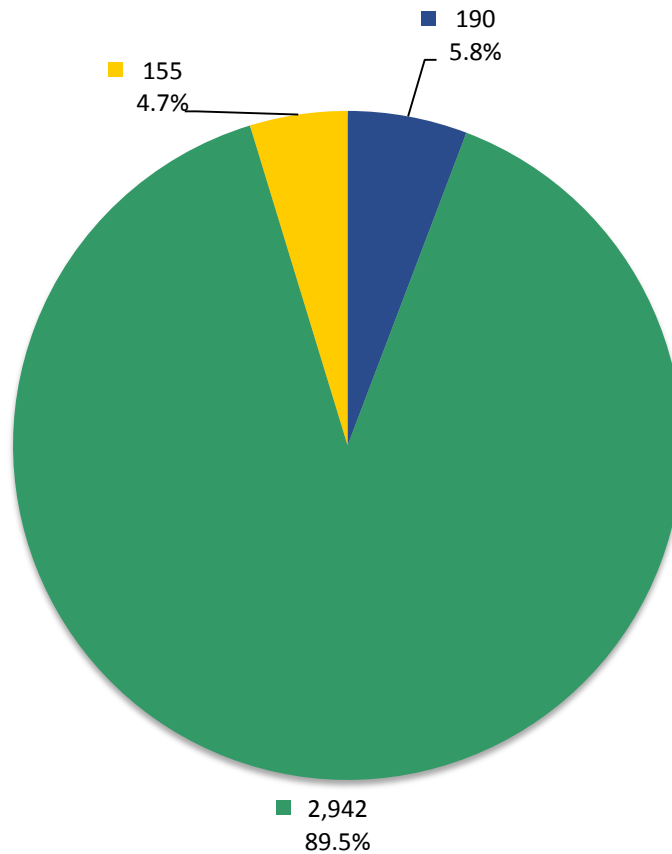
- Replace and retrofit existing lighting in 11 school district facilities with energy efficient, extended life fixtures.
- Reduce the number of fixtures and expand the existing dark school approach where applicable.
- Heating, ventilation and air-conditioning (HVAC) upgrade opportunities in 11 school district facilities may include: direct digital control (DDC) upgrades, scheduling and security integration, occupancy sensor controls, heating plant optimization and supply air pressure (SAP) reset.
- Prepare school-based energy conservation workshops to ensure students have an active role in reducing our energy consumption.
- Improve communication of the energy conservation initiative to the broader organization to raise energy awareness.
- Continuously improve and review our operational policies in an effort to reduce utility consumption.
- Proactively deliver regular energy intensity reports to departmental personnel for use in raising general awareness and examining variances from established targets.



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22225 BROWN AVENUE
MAPLE RIDGE, BC
V2X 8N6

School District 42 - Maple Ridge Greenhouse Gas Emissions by Source for the 2015 Calendar Year (tCO₂e*)



Total Emissions: 3,287

- 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 2015 (Generated May 26, 2016 9:07 AM)

Total offsets required: **3,281**. Total offset investment: **\$82,025**. Emissions which do not require offsets: **6** **

*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.

2015 Carbon Neutral Action Report Survey

Organization Name:

School District 42 Maple Ridge - Pitt Meadows

Please select your sector:

- School District

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

Please indicate which actions your PSO took in 2015:

Have developed an overall strategy/plan to reduce energy use in your organization's buildings inventory:

Yes

If Yes, please describe:

To successfully implement and sustain energy conservation and greenhouse gas reduction initiatives, School District 42 created a four year Strategic Energy Management Plan, in partnership with BC Hydro. This plan outlines goals to reduce district wide energy costs by more than \$500,000 and reduce energy consumption by approximately 4 million kWh, 12,800 GJ and 758 tCO₂e by 2019.

In 2015, School District 42 completed energy conservation projects that resulted in reductions of 1.3 million kWh, 2,540 GJ and 162 tCO₂e. Since December 2015 work is underway on upgrades that will result in additional reductions of 0.86 million kWh, 1,360 GJ and 91 tCO₂e. All of these projects put School District 42 at almost the half way mark to meeting the Energy Management Plan targets.

Undertook evaluations of building energy use:

Yes

Performed energy retrofits on existing buildings:

Yes

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

No

Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from buildings:

To help roll out the four year Energy Management Plan, the School District approved the Environmental Sustainability Policy that can be viewed here: http://www.sd42.ca/system/files/6530_%20Environmental%20Sustainability%20Policy%20_0.pdf. To help support the Policy, the Environmental Sustainability Committee was created.

Furthermore, we held a custodial training session in September 2015, had our first month long energy challenge that saw elementary and secondary schools competing against each other for the most energy savings and we continued working with elementary and secondary students on the Energy Ambassadors workshops, in partnership with BC Hydro Schools Program.

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

Indicate which actions your PSO took in 2015:

Have put in place an operations policy/program to support systematic reductions in fleet related emissions:

(e.g., program to convert fleet to renewable fuels)

No

If Yes, please describe:

(No response)

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

Yes

Replaced existing vehicles with hybrid or electric vehicles:

No

Took steps to drive less than previous years:

No

Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from fleet combustion:

(No response)

3) Supplies (Paper):

Indicate which actions your PSO took in 2015:

Have put in place an operations policy/program to facilitate a systematic reduction in paper-related emissions:

(e.g., policy to purchase 100% Recycled Content; default to double-sided printing)

Yes

If yes, please describe:

Our School District is currently rolling out the installation of a software application (PaperCut) that tracks the paper printed on each individual device as a way to not only track paper consumption but deter staff from printing more than they have to.

Have put in place an operations policy/program to facilitate behavioural changes from paper use:

(e.g. awareness campaign to reduce paper use):

Yes

If yes, please describe:

Our School District is currently rolling out the installation of a software application (PaperCut) that tracks the paper printed on each individual device as a way to not only track paper consumption but deter staff from printing more than they have to.

Used only 100% recycled paper:

No

Used some recycled paper:

Yes

Used alternate source paper:

(e.g., bamboo, hemp, wheat etc.)

No

Please list any other actions, programs or initiatives that your organization has introduced that support emissions reductions from paper supplies:

Our school district is currently purchasing 30% recycled paper only and is looking at purchasing only 100% recycled paper.

4) Other Sustainability Actions:

Please note that this section is optional

Business Travel

Created a low-carbon travel policy or travel reduction goal:

(low-carbon = lowest emission of greenhouse gas per kilometer per passenger)

No

Encouraged alternative travel for business:

(e.g. bicycles, public transit, walking)

Yes

Encouraged or allow telework/working from home:

Yes

Other:

(No response)

Education Awareness

Have a Green/Sustainability/Climate Action Team:

Yes

Supported green professional development:

(e.g. workshops, conferences, training)

Yes

Supported or provided education to staff about the science of climate change, conservation of water, energy and/or raw materials:

Yes

Other:

Our school district supported and provided education to students about the science of climate change, conservation of water, energy and/or raw materials.

Adaptation Planning for Climate Risks

Have assessed whether increased frequency of extreme weather events and/or long term changes in climate will affect your organization's infrastructure, its employees and/or its clients:

No

Have incorporated these anticipated changes in climate into your organization's planning and decision making:

No

Other:

(No response)

Other Sustainability Actions

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

No

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

(e.g., composting, collection of plastics, batteries)

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 any other sustainability actions your organization has taken not listed above:

A number of our schools are managing their own composting programs and some have adopted a "Pack It In, Pack It Out" policy.

Our school district is currently working on its Purchasing Policy that will include green standards for goods purchased.