



# 2014 CARBON NEUTRAL ACTION REPORT

MAPLE RIDGE - PITT MEADOWS SCHOOL DISTRICT NO.42

# EXECUTIVE SUMMARY



In 2014, as part of the Maple Ridge – Pitt Meadows School District *Strategic Facilities Plan*, the school district engaged consultants to produce high level energy assessments for all 34 school district facilities including 20 elementary schools, 6 secondary schools and 8 other buildings. These studies formed the basis for the *2015-2019 Energy Management Plan* that was approved by the Board of Education on March 25, 2015. This plan aims to achieve a school district wide electrical consumption reduction of 30% by 2019 or 4.44 million kWh. The reduction would result in estimated savings of \$400,000 per year that we can re-invest in our schools.

We will meet our target not only through the implementation of energy conservation measures such as lighting and heating, ventilation and cooling (HVAC) upgrades, but also through awareness and behaviour change and the continuous optimization of our operations. Maple Ridge - Pitt Meadows School District is in a good position to save on its ongoing utility costs.

Sylvia Russell  
Superintendent of Schools



## GREENHOUSE GAS EMISSION

The Maple Ridge - Pitt Meadows school district produced a total of 3,657 tonnes of greenhouse gas emissions from all sources as reported in SMARTTool.

GHG Emissions - Calendar Year 2014 (TCO2E)	3,635
Adjustments to GHG Emissions Reported in Prior Years (TCO2E)	22
<b>TOTAL GHG Emissions</b>	<b>3,657</b>

## OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2014

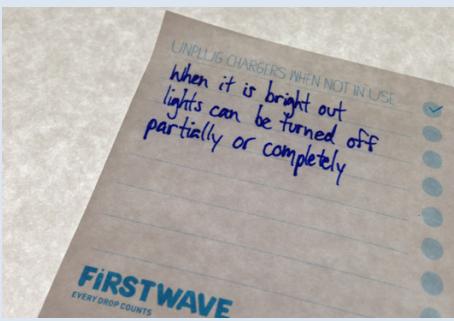
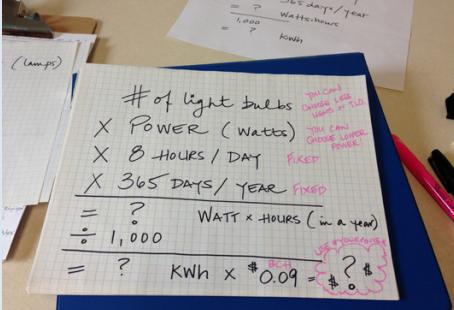
Of all the greenhouse gas emissions generated, a total of 3,654 tonnes of emissions offsets have been applied to become carbon neutral for 2014. This total was amended by 25 tonnes based on units consumed in 2013 but not reported previously due to billing delays.

Carbon Offsets 2014	3,629
Adjustments to Prior Years Carbon Offsets	25
<b>TOTAL Carbon Offsets</b>	<b>3,654</b>

## EMISSIONS REDUCTION HIGHLIGHTS

### Actions Taken to Reduce Greenhouse Gas Emissions in 2014

- Completed Level I energy studies on all 34 school district facilities that helped us build our strategic energy management long-term plan.
- Completed the BC Hydro sponsored Energy Management Assessment (EMA).
- Created the *2015-2019 Energy Management Plan* that was approved by the Board of Education in March 2015.
- Created an implementation plan that includes lighting, heating, ventilation and air-conditioning (HVAC) upgrade opportunities as well as awareness and behaviour change.



# THOMAS HANEY SECONDARY SCHOOL RETROFIT

## THE FLAGSHIP OF THE ENERGY MANAGEMENT PROGRAM

In 2014 work had started on upgrading Thomas Haney Secondary School where the upgrades will reduce energy consumption by 1.3 million kWh/year in electrical consumption and 2,540 GJ/year in natural gas consumption. This project will reduce greenhouse gas emissions for the school by 134 tCO<sub>2</sub>e or 35% annual emissions reduction from an estimated 386 tCO<sub>2</sub>e for 2014 to an estimated 252 tCO<sub>2</sub>e after project completion in 2015.

## STUDENTS POWERING REAL CHANGE

The school district, in partnership with BC Hydro Energy Ambassadors Program, hosted a workshop for Thomas Haney Secondary teachers and students interested in energy management. The workshop provided students with an opportunity to create and present a project related to the retrofit happening in their school.

## IN THE NEWS

**MARCH 2, 2015**

## MAPLE RIDGE SCHOOL DISTRICT CELEBRATES GREEN UPGRADES

The Maple Ridge - Pitt Meadows Times featured the Thomas Haney Secondary School 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."



## SD 42 POLICY ENVIRONMENTAL SUSTAINABILITY



In 2015, the Maple Ridge - Pitt Meadows Board of Education approved the Environmental Sustainability Policy. The Board of Education has identified environmental sustainability as a school district wide goal and committed to developing, maintaining and enhancing conservation initiatives.



## PLANS TO CONTINUE REDUCING GREENHOUSE GAS EMISSIONS 2015 – 2019

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- Replace and retrofit existing lighting 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 include: direct digital control (DDC) upgrades, scheduling and security integration, occupancy sensor controls, heating plant optimization and supply air pressure (SAP) reset.
  - Proactively deliver regular energy intensity reports to departmental personnel for use in raising general awareness and examining variances from established targets.
  - Continuously improve and review our operational policies in an effort to reduce utility consumption.
  - 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.
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## 2014 CARBON NEUTRAL ACTION REPORT

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MAPLE RIDGE, BC  
V2X 8N6

# 2014 Carbon Neutral Action Report (CNAR)

## - Part 2 ACTIONS

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### Organization Name

Maple Ridge Pitt Meadows School District 42

### 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.

Yes

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

In partnership with BC Hydro, the School District 42 Energy Management Plan that includes plans to undergo energy efficient upgrades at all 34 of its facilities has been approved by the Board of Education. The overall goal of the energy management plan is to reduce the school district's utility costs by continuously improving the energy performance of its facilities, and to meet the goal of reducing electrical consumption by 30% from 2013 levels by the year 2019. The target electrical consumption saving is equivalent to providing enough energy to power 440 BC average homes for a year or powering a secondary school for two full years.

The school district has applied to the Carbon Neutral Capital Program and was approved funding to retrofit our largest energy consuming secondary school. In 2014 work had started on upgrading

Thomas Haney Secondary, where the upgrades will total 1.3 million kWh/year. In conjunction with beginning this retrofit, a workshop was organized for Thomas Haney Secondary students who learned about the environmental, economic and social benefits of energy conservation projects in their school.

**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)

Yes

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:

School District 42 employees are continually reminded to limit their mileage, consolidate daily work assignments and travel together when possible.

**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:

There was a 14% reduction in paper consumption in the district, three times higher than the percentage reduction in paper consumption in 2013. The school district purchases 30% post-consumer recycled paper.

We still configure network printers to two sided coping, and strive for and encourage paperless meetings. The district has also developed a Parent Portal to serve as a communications channel between parents, schools and the school district. This portal eliminates the need for paper newsletters and all printed notices of events.

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### **Actions Taken to Reduce Emissions - continued**

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

The School District's 2015-2019 Energy Management Plan was approved by the Board of Education on March 25, 2015. This plan aims to achieve a school district wide electrical consumption reduction of 30% by 2019. The reduction would result in estimated savings of \$400,000 per year that the school district can re-invest in its schools. The aggressive target will be met not only through awareness and behaviour change, but also through the implementation of energy conservation measures such as lighting and heating, and ventilation and cooling (HVAC) upgrades.

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

Yes

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**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**

Yes

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

Yes

**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**

No

**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

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 OptionsAllow 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**

No

**Secure bicycle storage is provided**

Yes

**Other Sustainability ActionsEstablish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models**

No

**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**

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.)**

Yes

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

Yes

**Incorporated lifecycle costing into new construction or renovations**

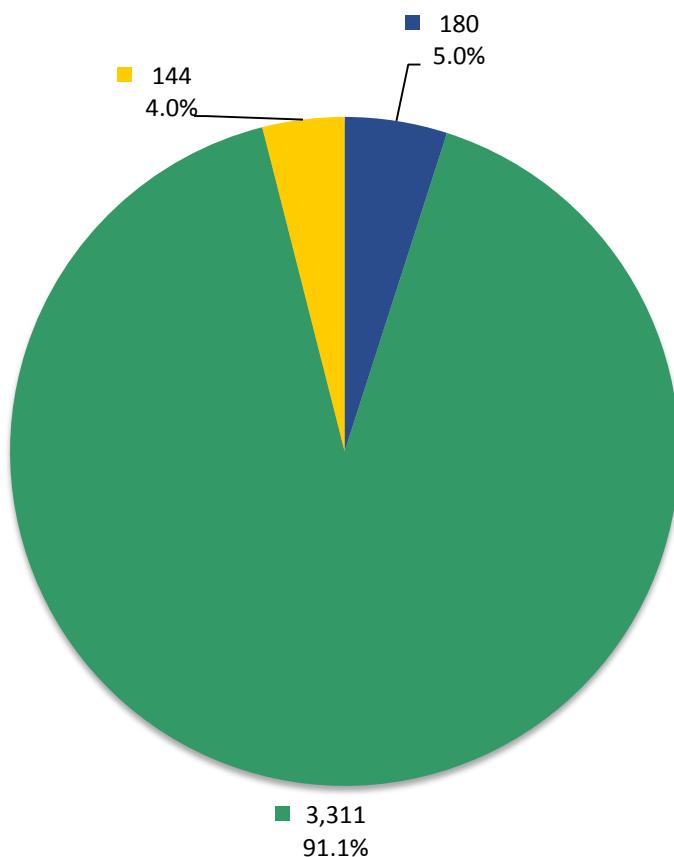
Yes

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

The Board of Education approved the Environmental Sustainability Policy that sets the energy consumption reduction target and responsibilities for each school district staff or student.

Several of our schools have community gardens where fresh vegetables are grown and sometimes used in the school's kitchens. Community gardens bring awareness around local food production and the costs of producing and shipping food from outside of the region/country.

**School District 42 - Maple Ridge  
Greenhouse Gas Emissions by Source  
for the 2014 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 3,635**

- 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 2:26 PM)**

Total offsets required: 3,629. Total offset investment: \$90,725. Emissions which do not require offsets: 6 \*\*

\*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.