

# 2012 CARBON NEUTRAL ACTION REPORT



## EXECUTIVE SUMMARY



School District No. 38 (Richmond) is an exciting, multicultural, educational organization that provides public education for approximately 22,000 students K-12 and boasts one of the highest graduation rates in BC. Staff and students are spread across fifty-two locations in the District: 38 elementary schools, 10 secondary schools, one alternative school, the Administration building, Technology Services Centre and the Works Yard. With over 2500 staff, we ensure that we are able to properly support over 20,000 students in the District. We acknowledge that as educators we have a responsibility to go beyond academic knowledge and teach our students to be socially responsible citizens.

Environmental stewardship is a large part of that social responsibility framework and we endeavour to model it as well as teach it.

Now in our third year of being carbon neutral, the Richmond School District continues to be committed to conserving energy and minimizing our greenhouse gas emissions. There were a number of initiatives in 2012 that supported our carbon neutral and environmental sustainability objectives. In 2012 our greenhouse gas (GHG) reduction initiatives continued to focus primarily on reducing emissions from our largest 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 by first ensuring that lighting and equipment is turned off when facilities are unoccupied and secondarily by investing in energy efficient retrofits. We leveraged the funding from the Carbon Neutral Capital Program (CNCP) to install two new energy efficient natural gas boilers which we anticipate will reduce our GHG emissions by 29.3 tonnes of CO<sub>2</sub> equivalent annually. We continued to make progress with the BC Hydro Continuous Optimization program. By reviewing and improving the way in which our buildings operate we anticipate significant energy savings with relatively little investment, as all identified energy saving measures have a payback of 2 years or less.

To support our broader environmental sustainability goals, in 2012 we launched Environmental Stewardship Implementation Committees for the eight environmental focus areas in the District to begin the process of establishing long term vision, short term objectives and metrics in each of the eight focus areas. The Implementation Committees are collaborative teams that bring together both education and operations to advance sustainability in what we teach and how we operate. Also in 2012 we launched a pilot program for the separation and

collection of organic waste in our schools. Through the pilot we are testing our processes with a view to rolling out organics collection district-wide

We continue to engage both our students and our employees, leveraging their knowledge and enthusiasm as we strive for lower GHG emissions. Doing so has benefits beyond the environment; generates financial savings (fewer goods such as paper and energy consumed; reduced offsets required to purchase) and social benefits (more engaged employees, students who are more passionate about caring for their communities and the world that surrounds them). Environmental sustainability continues to be a priority for the Richmond School District and we are committed to continuous improvement in this area: Environmental Stewardship remains one of the District's four Developmental Objectives. We still have a lot of work before us, but becoming better stewards of the environment is worth the effort and investment.



Dr. Monica Pamer  
Superintendent of Schools

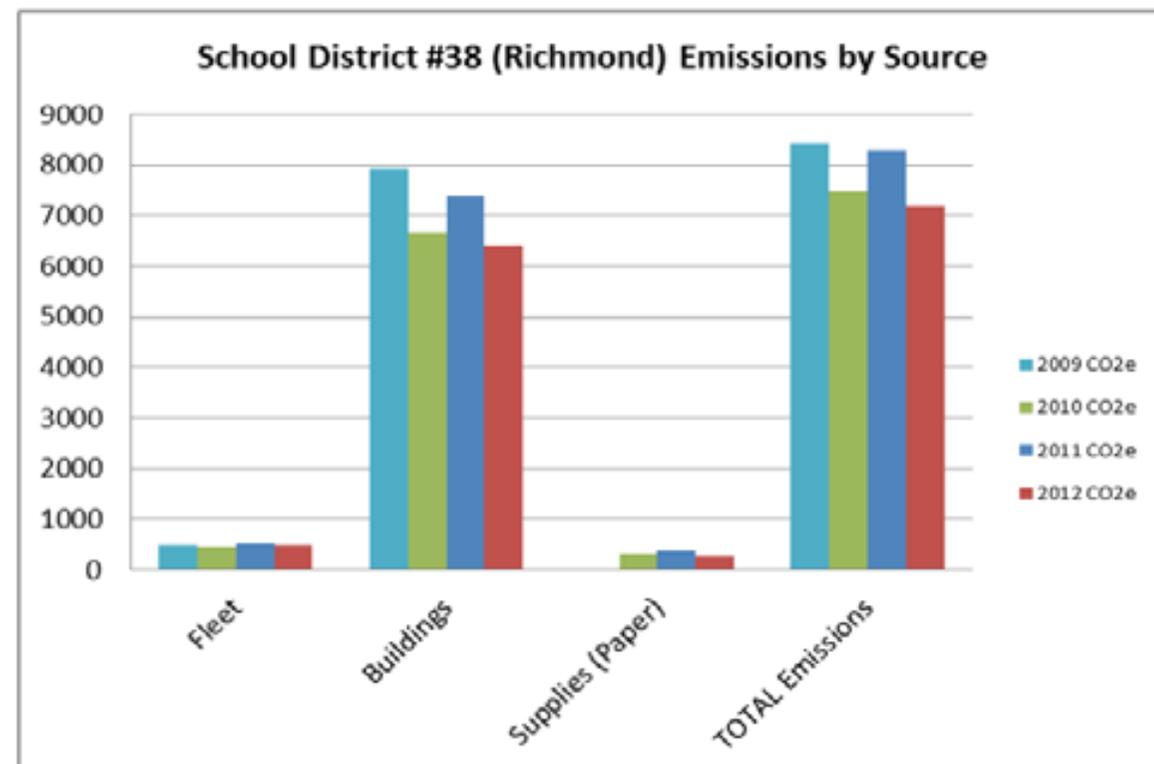


## 2012 GREENHOUSE GAS EMISSIONS

The Richmond School District has calculated our 2013 carbon footprint, in accordance with the Greenhouse Gas Reduction Targets Act, to be 7189 tonnes of CO<sub>2</sub> equivalent.

EMISSION SOURCE	GHG EMISSIONS (TONNES OF CO <sub>2</sub> E)	2012 RESULTS COMPARED TO 2011
<b>Buildings</b>	6405	14% Decrease
<b>Fleet</b>	508	1.3% Decrease
<b>Paper</b>	276	33% Decrease
<b>Total</b>	7189	13% Decrease

In 2012 we achieved a reduction of 1089 tonnes over our 2011 emissions. The graph below shows the district's emissions by source over the past four 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 89.1%

## **SUPPLIES**

Emissions categorized as supplies are indirect emissions originating from the district's use of office paper and account for 3.8% of the district's overall GHG emissions.

## **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 7.1% of the district's overall 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 in-scope 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.

## TRAVEL-RELATED EMISSIONS

Under the Carbon Neutral Public Sector commitment, only core government organizations that report through the Consolidated Revenue Fund (e.g., ministries, special offices, tribunals) are required to track and report the emissions from the business travel of public officials. The Richmond School District does not fall within 'core government' and therefore does not track travel-related emissions.





## **OFFSETS APPLIED TO BECOME CARBON NEUTRAL IN 2012**

In 2012 we were carbon neutral for the third 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.

In order to become carbon neutral for 2012, the Board of Education of School District 38 (Richmond) purchased carbon offsets from the Pacific Carbon Trust for 6938 tonnes of CO<sub>2</sub>e.

As required by section 5 of the Carbon Neutral Government Regulation, 251 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 2012. 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.

## **CHANGES TO GREENHOUSE EMISSIONS & OFFSETS REPORTING IN PREVIOUS YEARS**

Following the public release of the Richmond School District's 2011 Carbon Neutral Action Report, it was determined that the total emissions for the 2011 calendar year were over-reported by 2 tonnes CO<sub>2</sub>e and offsets required to become carbon neutral in 2011 were over-reported by 1 tonne CO<sub>2</sub>e. The surplus of offsets purchased in 2011 has been applied against our 2012 emissions.



## EMISSIONS REDUCTION ACTIVITIES

During 2012, the Richmond School District was engaged in a diverse range of environmental sustainability initiatives. Specific measures undertaken to reduce carbon emissions in 2012 and planned future actions form the basis of the Carbon Neutral Action Report (CNAR) Actions Template (attached). An overview of the actions taken to reduce emissions as well our actions to promote a culture of conservation and environmental stewardship are provided in the following pages.

## ACTIONS TAKEN TO REDUCE GREENHOUSE GAS EMISSIONS



In 2012 we continued the process of building the necessary structures to enable consistent sustainability practices across the District. With the revised Environmental Stewardship Policy in place as of June 2011, in 2012 we switched focus to that of

fully implementing the updated policy. The program, branded 'Eco-Wise', is being launched in order to create the structures that will embed environmental stewardship in the day-to-day operations of the district, incorporating Environmental Stewardship into the school curriculum and into the delivery of each employee's core mandates.

The Richmond School District is coordinating and planning for sustainability initiatives in eight focus areas: curriculum development, energy conservation, gardening and greening, leadership, sustainable transportation, sustainable purchasing, waste reduction and water conservation. In 2012 we established four Environmental Stewardship Implementation Committees. Each of these Committees is responsible for two of the eight focus areas. Initially the Implementation Committees will be charged with reviewing sustainability accomplishments achieved to date, assessing where there are opportunities for improvement and establishing both a long term vision and short term objectives in each of the focus areas. Also in 2012 the composition of the Richmond Sustainability Action Team (RSAT) was expanded to include representation from all functional areas of the organization in an effort to begin to build responsibility and accountability for Environmental Stewardship into each district function.

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. We are continuing with the District's comprehensive energy conservation program and in 2012 undertook a number of energy conservation initiatives:

- We continued working with conservation partners BC Hydro and FortisBC. We renewed our commitment as a Power Smart Partner with BC Hydro to reduce energy consumption using a Strategic Energy Management Plan (SEMP). We renewed our Energy Manager Contract with BC Hydro our Energy Specialist contract with FortisBC, both of which provide funding for dedicated resources to oversee implementation of the SEMP and identify and implement energy conservation measures. In 2012 we welcomed a new Energy Specialist to our team.
- In 2012 we relocated our Energy & Sustainability team, both physically and within the organization, to become part of Facilities and Operations. This strategic move closely aligns the team with those who have the most influence over process and procurement that affect energy consumption and resource management.
- With the assistance of Carbon Neutral Capital Funding from the Ministry we completed two boiler upgrades. In total these two upgrades are



anticipated to save 585 GJ of natural gas, \$5800 in energy costs and 29.3 tonnes of CO<sub>2</sub>e annually.

- We continued to make progress with the BC Hydro Continuous Optimization program focussing on identifying low cost or no cost operational measures to improve the efficiency of our secondary schools. In 2012 we completed the investigation phase at the three Phase 1 sites. At an additional three sites (Phase 2) we completed the installation of real-time metering and an energy management information system and started investigation of the current operational systems.
- We completed several additional energy conservation projects:
  - Natural gas boilers upgraded at three sites (including the 2 completed with CNCP funding mentioned above)
  - Lighting retrofits completed in four sites
  - Lighting controls (occupancy sensors) installed at 23 sites
  - Building automation systems installed at 4 sites and building control upgrades completed at an additional three sites
  - Domestic hot water boiler replaced with on-demand system at two sites
  - Building envelope upgrade at 1 site
  - Installed faucet aerators to reduce water consumption (thereby also reducing energy required to heat the hot water)

In addition to energy conservation in our buildings, the district purchased four new fleet vehicles in 2012, providing us with an opportunity to downsize vehicles and select more fuel efficient models. Ongoing conservation efforts in our fleet have also relied on minimizing emissions through vehicle maintenance and behaviour change such as anti-idling campaigns. Increasing the number of fuel efficient vehicles within the fleet along with a change in policy whereby managers' fleet vehicles are now pooled rather than allocated one per manager have allowed us to achieve reductions in our fleet emissions despite increasing the overall number of vehicles within the fleet.



While upgrades to mechanical equipment and appropriate management of the scheduling of that equipment are important in order to reduce greenhouse gas emissions and energy consumption, achieving deep and lasting reductions also requires engaging the end users of these systems: occupants of buildings, drivers of fleet vehicles, consumers of paper and supplies. In this regard, the Richmond School District continues to engage and support students, teachers, support staff and administrators in becoming better environmental stewards. School-based green teams continue to focus on a broad range of sustainability initiatives including school gardens, walk to school programs, anti-idling campaigns, energy conservation campaigns, composting, recycling, litter-free lunches and more. In 2012 Green Teams were supported through Green Team Training workshops where school Green Team were provided with opportunities to enhance their environmental leadership skills. Our Eco-Wise Cafés also continued to meet regularly to enhance the implementation of our environmental stewardship policy. In 2012 the district increased usage of the Eco-Wise Assessment tool which allows schools to explore a variety of ways to promote awareness and behavioural change for environmental sustainability and tracks progress on actions that the site has implemented to date.

Two important new sustainability initiatives were launched in 2012 that we anticipate expanding in the coming years: an organics collection pilot and the Workplace Conservation Awareness program. A pilot was launched in 2012 for organics collection in schools. The pilot is designed to test the process associated with the collection of organic waste (food scraps) in schools, including: the communication of what can be collected in organics bins, the type of receptacles to be used, the frequency of pick-up needed, and the process for emptying bins and storing organics waste until pick-up dates. With the support of BC Hydro the Richmond School District launched an exciting energy conservation campaign called Workplace Conservation Awareness (WCA). With 2012 being the inaugural year we are pleased to have nine sites participating in the program, including our Administration building and our Maintenance facility. The WCA program provides an opportunity for schools and the school district to work together collaboratively on saving energy and contributing to a culture of sustainability throughout the district.





## PLANS TO CONTINUE REDUCING GREENHOUSE GAS EMISSIONS 2013 – 2015

In the next year we plan to leverage the Environmental Stewardship Implementation Committees and the Richmond Sustainability Action Team to establish a long-term vision and short term goals in each of our eight focus areas of the Environmental Stewardship policy: Curriculum, Energy Conservation, Gardening and Greening, Leadership, Sustainable Purchasing, Sustainable Transportation, Waste Management and Water Conservation. In 2013 we also plan to establish metrics in each of these areas which will allow us to measure our progress over time in a consistent manner.

We plan to continue to focus on reducing GHG emissions primarily through focussing on our largest source of emissions: energy consumed in our buildings. To this end we will continue investigating opportunities for savings and implementing identified energy conservation measures through the BC Hydro Continuous Optimization program and through our Integrated Building Performance pilot. We will also continue to engage building occupants through the BC Hydro Workplace Conservation Awareness campaign and other outreach programs.

Our fleet vehicle replacement program will continue to replace outdated vehicles with fuel efficient models. We will also continue to monitor the growth of plug-in hybrid and full electric vehicles to assess their value in reducing emissions.

We anticipate implementing sustainable procurement processes and look for opportunities to engage suppliers by encouraging them to reduce their own

greenhouse gas emissions and other sustainability impacts. We anticipate expanding the organics collection pilot to additional sites in 2013 with a full roll-out to all sites in the district by the end of 2014.

We will also continue encouraging schools to support behavioural changes related to sustainability by linking curriculum to school district practice, ensuring that what we teach our students regarding mitigating climate change and minimizing our impact on the environment is reflected in our operational practices in the district.





School District No. 38  
7811 Granville Avenue  
Richmond, BC, V6Y 3E3  
[www.sd38.bc.ca](http://www.sd38.bc.ca)

The majority of photos were graciously taken by Hugh Boyd's photography class.

## School District 38 Richmond - 2012 Carbon Neutral Action Report

### Actions Towards Carbon Neutrality

The actions listed below contribute to a reduction in greenhouse gas emissions from sources for which public sector organizations are responsible under the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act.

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
<b>Mobile Fuel Combustion (Fleet and other)</b>					
<b>Behaviour change program</b>					
Provide fleet driver training to reduce fuel use	Completed (in Reporting Year)	Smart Driver training provided to bus drivers at October 2012 Professional Development day.		2012	2012
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Ongoing/In Progress	Continued expansion of anti-idling signs. In 2012 additional signs were placed at one elementary school & one secondary school.	Ensure that anti-idling signs are placed at all schools. Encourage school Green Teams to undertake anti-idling campaigns.	2008	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress	Managers routinely carpool to meetings. Tradespersons carpool when possible (dependent on need for access to tools in vans). Bussing from a central location is set up for district-wide professional day.	Continue to encourage carpooling.	2008	No End Date (Continuous)
<b>Vehicle fuel efficiency</b>					
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	Replaced 3 cargo vans equipped with V6 engines with 3 Transit Connect compact panel vans. Two new buses with 2010 emission controls replaced two 13 year old buses.	Continue to buy fuel efficient vehicles	2008	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	3 cargo vans were downsized to compact panel vans in 2012. Every vehicle replacement is matched to the job requirements and smaller models are favoured when ever possible.	Continue to replace larger vehicles with smaller models when possible.	2008	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	All fleet vehicles are serviced every three months.	Continue vehicle maintenance practices.	2008	No End Date (Continuous)
<b>Stationary Fuel Combustion, Electricity</b>					
<b>Behaviour change program</b>					
Help staff reduce personal energy use through ""workstation tune-ups""	Not Yet Evaluated				No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress	Reminders to unplug equipment when not in use are included in energy conservation communications for shut-down periods (winter break, spring break, summer).	Continue to include reminders in energy conservation messaging.	2011	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress	Reminders to close blinds are included in: Various energy conservation communications that are distributed to staff, The Eco-Wise Assessment tool as an energy conservation action, The Energy Walk-through Checklist	Continue to provide reminders to close blinds in order to prevent heat loss at night during heating season.	2010	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress	Reminders to use the air dry setting on dishwashers is included in the Eco-Wise Assessment tool as an energy conservation action.	Continue to provide reminders to use the air dry setting on dishwashers.	2010	No End Date (Continuous)
Encourage use of stairs instead of elevators	Ongoing/In Progress	Reminders to use stairs for both health and energy conservation reasons are posted at elevators in the Administration Building	Continue to post reminders to use the stairs	2008	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress	Reminders to turn off lights when not in use are included in various energy conservation communications that are distributed to staff, the Eco-Wise Assessment tool as an energy conservation action, the Energy Walk-through Checklist and all shut down checklists (spring break, summer, winter break). In 2012 nine sites in the District joined the BC Hydro Workplace Conservation Awareness program. Eight of the nine sites participating have lighting as their energy conservation	Continue to provide reminders to turn out lights and take advantage of daylighting when possible. Continue with Workplace Conservation Awareness campaigns.	2008	No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		focus.			
Promote hot water conservation	Ongoing/In Progress	Energy conservation tips encourage staff to use energy efficient settings on dish washers and to use cold water in clothes washers. Faucet aerators are being installed on faucets.	Continue to encourage conservation of hot water.	2008	No End Date (Continuous)
<b>IT power management</b>					
Install power management software which shuts down computers outside of regular business hours	Completed (in Previous Year)				No End Date (Continuous)
Implement server virtualization	Completed (in Previous Year)				No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Completed (in Previous Year)				No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices as part of a print management strategy	Ongoing/In Progress	Replaced MFD fleet with more energy efficient model. Completed analysis (number and location) of stand-alone print devices in preparation for downsizing the number of devices.	Review need for stand-alone print devices and being to eliminate one that are not required.	2011	No End Date (Continuous)
Apply auto-sleep settings on printers, fax machines, and/or multi-function devices	Completed (in Previous Year)				No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	All new/upgraded computers purchased are ENERGY STAR models	Continue to purchase ENERGY STAR computers	2008	No End Date (Continuous)
<b>Leased buildings</b>					
Establish energy performance baseline for leased buildings	Completed (in Previous Year)				No End Date (Continuous)
Develop a green lease policy that requires green features to conserve energy be included in all lease negotiations	Not Yet Evaluated				No End Date (Continuous)
<b>Owned buildings</b>					
Establish energy performance baseline for owned buildings	Completed (in Previous Year)				No End Date (Continuous)
Register for performance labelling/certification for operations and maintenance of owned buildings (e.g., LEED EB:O&M)	Not Yet Evaluated				No End Date (Continuous)
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	Ongoing/In Progress	Submit documents to CaGBC for LEED NC Gold Certification for Brighthouse Elementary School	Continue to pursue LEED Gold NC for new construction projects.	2008	No End Date (Continuous)
Perform energy retrofits on existing, owned buildings	Ongoing/In Progress	Energy retrofits completed in 2012 include: natural gas boilers upgraded at three sites, lighting retrofits in four sites, lighting controls installed at 23 sites, building automation systems installed at 4 sites, domestic hot water boiler replaced with on-demand at one site, building envelope upgrade at 1 site.	Additional boiler upgrades and energy conservation measures as funding permits.	2008	No End Date (Continuous)
Incorporate a refrigerant management strategy into regular building management/maintenance to reduce fugitive emissions	Completed (in Previous Year)				No End Date (Continuous)
<b>Planning/management</b>					
Reduce office space (square meters) per employee	In Development	The long range capital plan reviews expectations for growth and declines in student population. Planning for locations of schools takes this into account.	Continue to monitor student population and provide educational facilities aligned with the demand.	2010	No End Date (Continuous)
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	Real time metering (natural gas and electricity) installed in 4 secondary schools as part of BC Hydro Continuous Optimization program. Real time metering installation in progress at four elementary schools (electricity only) as part of a pilot with Honeywell	Complete installation of real time metering in seven schools where installation is in progress. Leverage BC Hydro smart meters to obtain real time energy data for electricity.	2010	2014

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
		and at three additional secondary schools (natural gas and electricity) as part of the Continuous Optimization program.			
<b>Retrofit details for owned buildings</b>					
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	Upgrades to mechanical systems in 2012 include: 4 boilers upgraded with high efficiency condensing boilers, natural gas fired rooftop units replaced with more efficient units at two sites, domestic hot water boilers replaced with on-demand systems at two sites.	Plans for mechanical upgrades in 2013-14 include replacement of three additional boilers and an increased coil and duct cleaning program	2008	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	Upgrades to replace T12 or metal halide lights with more energy efficient T8 fluorescent lighting were completed at four sites. Lighting controls were added in 20 elementary school gymnasias, throughout the classrooms in one elementary school and in intermittently used spaces at an additional four sites.	We are reviewing a number of future opportunities for reducing energy consumed by lighting including: occupancy/vacancy sensors in classrooms, linking security lights to alarm system, replacing exterior lighting with LED, bi-level lighting in hallways and corridors.	2008	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	Added building automation systems at 4 elementary schools, upgraded control systems at 3 additional elementary schools, completed the investigation phase of BC Hydro Continuous Optimization at 3 secondary schools, prepared specifications for replacement of DDC system at one secondary school.	Implement Continuous Optimization at Phase 2 secondary schools, replace DDC system at 1 secondary school. Continue to upgrade DDC systems as opportunities arise and funding permits.	2008	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	Ongoing/In Progress	Upgrading building envelope at one secondary school. Increased roofing insulation in one section of elementary school roof during roof replacement.	Implement second phase of building envelope upgrade at secondary school. Increase roofing insulation as re-roofing projects are undertaken.	2008	No End Date (Continuous)
<b>Supplies (Paper)</b>					
<b>Behaviour change program</b>					
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	Continued to make training available for collaborative software.	Continue to offer training.	2008	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress	Several departments have implemented paperless meetings. All schools have projectors and use of Smart Boards is increasing in order to reduce the need for paper handouts in classrooms. Paper conservation is included in Waste Management Guidelines. Comparative metrics (paper consumption per student) shared with all sites in 2012.	Continue to share information on internal paper consumption benchmarking. Set paper reduction targets. Utilize Eco-Wise Assessment Tool to encourage and monitor paper reduction activities.	2008	No End Date (Continuous)
<b>Electronic media in place of paper</b>					
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	First Class is utilized as collaborative software. In 2012 plans were started to revamp the First Class infrastructure.	Upgrade First Class infrastructure	2008	No End Date (Continuous)
Use electronic document library for filing common documents	In Development	Document Management system is under investigation. Analysis of systems utilized by various areas of the business is in progress.	Implement improved document management with a pilot project in Facilities & Operations	2011	2014
Switch to an electronic payroll notification system in place of paper pay stubs	Completed (in Previous Year)				No End Date (Continuous)
<b>Paper Type</b>					
Purchase 30% post-consumer recycled paper	Completed (in Previous Year)				No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	The District's standard is a minimum of 30% recycled content for all office paper however all order forms for paper orders also include options for purchasing 100% post-consumer recycled paper. In 2012 we also began evaluating paper with zero wood based fibre.	Continue to encourage purchase of 100% post-consumer recycled paper. Continue to evaluate paper produced without wood fibre.	2010	No End Date (Continuous)

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
<b>Printer/document settings</b>					
Switch networked printers and photocopiers to automatic double-sided	Completed (in Reporting Year)	Fleet of multi-function devices was replaced in 2012 and all were programmed with default double-sided print settings. Copier technicians have been instructed to retain the default double-sided settings.		2012	2012

## School District 38 Richmond - 2012 Carbon Neutral Action Report

### Actions to Reduce Provincial Emissions and Improve Sustainability

The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act. Public sector

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
<b>Business Travel</b>					
<b>Behaviour change program</b>					
Train staff in web-conferencing	Completed (in Previous Year)				No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress	Staff regularly carpool to offsite meetings. School buses are arranged when there are a large number of attendees at an event/meeting.	Continue to encourage carpooling.	2008	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress	Use of Skytrain is encouraged for meetings in Vancouver. When planning large staff or student conferences information on alternate transportation (e.g. bus routes) is provided.	Continue to encourage alternate transportation.	2008	No End Date (Continuous)
<b>Policy and budgeting</b>					
Create a low-carbon travel policy or travel reduction goal	Not Yet Evaluated				No End Date (Continuous)
<b>Virtual meeting technology</b>					
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Completed (in Previous Year)				No End Date (Continuous)
Make desktop web-cameras available to staff	Completed (in Previous Year)				No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Not Yet Evaluated				No End Date (Continuous)
<b>Education, Awareness, and Engagement</b>					
<b>Awards/Recognition</b>					
Establish a sustainability/green awards or recognition program	Ongoing/In Progress	Green Gala recognizes schools/students who have completed Environmental Stewardship projects during the year. Some schools have Environmental Stewardship service awards for students. Recipients of external awards such as BC Green Games and BC Hydro Community Champions are publicly recognized.	Revitalize EcoWise Star rewards program. Continue to encourage schools to include an Environmental Stewardship award in their school's service awards by developing criteria by which such an award might be assessed.	2008	No End Date (Continuous)
<b>Other Education, Awareness, and Engage</b>					
Encourage environmental stewardship through outreach	Completed (in Reporting Year)	The Richmond School District, in cooperation with the City of Richmond and the David Suzuki Foundation, held the the Richmond Earth Day Youth (REaDY) Summit. As a youth-led, youth-oriented event, the conference encouraged environmental stewardship through motivational speakers and inspiring workshops. This free conference provided opportunities for local and regional youth and adult environmental stewards to network in order to share effective practices and problem solve common challenges.		2012	No End Date (Continuous)
<b>Staff Professional Development</b>					
Support green professional development (e.g., workshops, conferences, training)	Ongoing/In Progress	Green Team Leadership Training was delivered again in 2012 and is supported through monthly Eco-Wise Sustainability Cafés. Energy Conservation and sustainability presentations workshop provided at the district-wide professional development day. Ongoing gardening study group is offered to teachers. Several staff attend sustainability-related conferences and workshops offered externally.	Continue to offer Environmental Stewardship professional development opportunities within the district and provide opportunities for staff to attend external workshops as appropriate.	2008	No End Date (Continuous)
<b>Staff awareness/education</b>					

## School District 38 Richmond - 2012 Carbon Neutral Action Report

### Actions to Reduce Provincial Emissions and Improve Sustainability

The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act. Public sector

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
Provide education to staff about the science of climate change	Ongoing/In Progress	One of the monthly Eco-Wise Cafes held in 2012 focussed specifically on the topic of climate science. Workshops on climate change were included at the 2012 Richmond Earth Day Youth Summit.	Continue to offer existing programs and develop additional channels for sharing climate change science information with staff.	2008	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress	Eco-Wise Cafes have monthly theme and are often centred around conservation (Energy Conservation, Water Conservation and Sustainable Purchasing are all existing themes). Energy conservation tips are shared throughout the year, with recommendations for saving energy during school closures. Conservation tips are provided in the Eco-Wise Assessment tool for each site to self-assess their conservation behaviours.	Increase utilization of Eco-Wise assessment tool. Enhance materials for monthly sustainability campaigns.	2008	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress	Green tips are available through the Eco-Wise Assessment Tool and on the Environmental Stewardship website. After each Eco-Wise Café, Power Point presentations and handouts are shared digitally to a network. Sustainability communications are sent to various internal conferences as well as to a specific Sustainability conference.	Update Environmental Stewardship website more frequently and develop plan to market the website as a go-to source for information. Develop a dedicated spot on the website for green tips.	2008	No End Date (Continuous)
Provide sustainability education during new staff orientation	Not Yet Evaluated				No End Date (Continuous)
<b>Team-building</b>					
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress	Established long-term goal of having Green Teams at every site. Green Teams are endorsed by executive. Established 4 Environmental Stewardship Implementation Teams to develop long term vision and short term goals in each of the District's eight Environmental Stewardship focus areas. Green Teams were actively engaged in sustainability actions throughout 2012 including school gardens, composting, energy conservation, anti-idling campaigns etc.	Continue to support Green Team development, including district support sites (Administration building, Works Yard, Technology Services Centre)	2008	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress	The District continues to have two positions with direct responsibility for Sustainability: Manager of Energy & Sustainability and Teacher Consultant for Science & Sustainability. Sustainability is also included as a portfolio responsibility of one member of the Executive team (Assistant Superintendent) The District provides financial support in the form of Sustainability Grants of up to \$1000 per site or school.	Assess staffing requirements to meet targets in 5-year Sustainability Action Plan and advocate for additional staffing resources to support achievement of sustainability goals where applicable.	2008	No End Date (Continuous)
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Ongoing/In Progress	Delivered through Eco-Wise Sustainability Cafes, BC Hydro Workplace Conservation Awareness (WCA) training, BC Hydro Energy Ambassadors and Community Champions	Continue to deliver behaviour change training, primarily through the WCA program	2010	No End Date (Continuous)
<b>Other Sustainability Actions</b>					
<b>Adaptation to Climate Change</b>					
Assessed whether extreme weather events and/or long term changes in climate will affect the organization's business areas	Not Yet Evaluated				No End Date (Continuous)
Integrated considerations of extreme weather events and/or long term changes in climate into the organization's decision making.	Not Yet Evaluated				No End Date (Continuous)
<b>Building construction, renovation</b>					
Establish a policy to reuse materials where possible and divert	Ongoing/In Progress	Construction project for envelope remediation included requirement	Establish targets for diversion of construction waste and demolition	2008	No End Date

## School District 38 Richmond - 2012 Carbon Neutral Action Report

### Actions to Reduce Provincial Emissions and Improve Sustainability

The actions listed below contribute to a reduction in greenhouse gas emissions from sources that fall outside of the reporting requirements defined in the carbon neutral government regulation of the Greenhouse Gas Reduction Targets Act. Public sector

Action	Status	Steps Taken	Steps Planned	Start Year	End Year
construction and demolition debris from landfills and incineration facilities	Progress	in specifications for contractor to achieve minimum 70% diversion of waste and construction debris from landfill.	debris as part of Purchasing Guidelines.		(Continuous)
Incorporate lifecycle costing into new construction or renovations	Ongoing/In Progress	A Long Range Facilities Plan which incorporates lifecycle costing is in progress.	Continue to incorporate lifecycle costing into building construction and major renovation projects.	2009	No End Date (Continuous)
<b>Commuting to and from home</b>					
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress	Sustainable Transportation Guidelines launched as part of revised Environmental Stewardship Policy. One monthly Eco-Wise Cafe focused on sustainable transportation. Many schools have Walk to School programs (e.g. Walking Wednesdays). Some schools have a 'Walking School Bus' where parents monitor intersections to allow children to walk to school safely in a group. For staff a carpool conference is maintained so that staff can post ride share requests.	Promote increased use of Rideshare Conference. Encourage alternative transportation for commuting through targeted campaign.	2008	No End Date (Continuous)
Provide shower or locker facilities for staff/students who commute by foot or by bicycle	Ongoing/In Progress	Existing shower facilities at all the Administration building and all secondary schools.	Consider expanding number of shower facilities as funding becomes available.	2008	No End Date (Continuous)
Provide secure bicycle storage	Completed (in Previous Year)				No End Date (Continuous)
<b>Procurement (non-paper supplies)</b>					
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Not Yet Evaluated				No End Date (Continuous)
Establish green standards for goods that are replaced infrequently and/or may require capital funds to purchase (e.g., office furniture, carpeting, etc.)	Ongoing/In Progress	Environmental Stewardship Implementation Committee established for Sustainable Purchasing and Waste Management.	Continue to review purchases for opportunities to expand and refine Sustainable Purchasing guidelines. Establish short-term goals and measurable criteria to evaluate Sustainable Purchasing performance.	2010	No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress	Garbage bags are 100% biodegradable. Paper towels and toilet paper are 100% with up to 83% PCW content. Two secondary schools and one elementary school use "Ecologo" certified line of cleaning chemicals which are manufactured in the Lower Mainland. When gym floors are replaced a material that does not require future waxing is used for the new floor.	When current contract for cleaning supplies expires review feasibility of moving to greater use of 'Ecologo' cleaning products.	2008	No End Date (Continuous)
<b>Waste reduction/diversion</b>					
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress	Initiated organics collection pilot at one elementary school. Installed water bottle refilling stations at 18 sites to reduce waste from single-use plastic water bottles. A number of schools continue to compost on site and conduct ongoing waste audits.	Expand organics collection pilot to one secondary school. Implement second phase of pilot in 2013. Expand organics collection to all sites by end of 2014. Establish waste diversion targets.	2009	No End Date (Continuous)
Implement a hazardous waste reduction and disposal strategy	Completed (in Previous Year)				No End Date (Continuous)
<b>Water conservation</b>					
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress	Water Conservation Guidelines are published as part of the Environmental Stewardship Policy. These guidelines include recommendations for water conservation at the school/site and district level. Water meters were installed at twenty elementary schools in an ongoing effort to establish baseline water consumption figures. Faucet aerators were installed at two additional schools to reduce domestic water. Metering faucets are installed when water faucets require replacement.	Track water consumption at metered sites and share comparative consumption data. Establish water conservation targets.	2010	No End Date (Continuous)

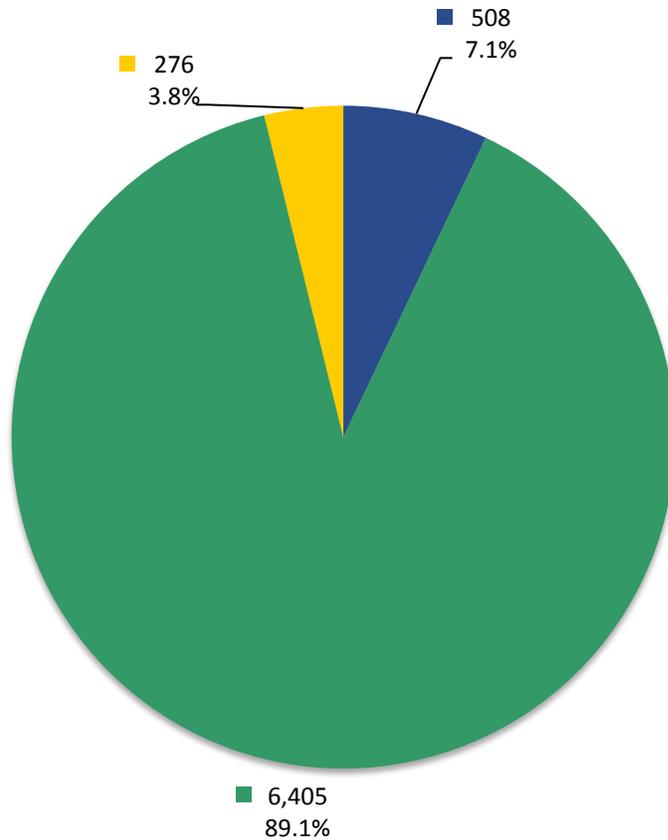
## School District 38 Richmond - 2012 Carbon Neutral Action Report

### Actions to Reduce Provincial Emissions and Improve Sustainability

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Action	Status	Steps Taken	Steps Planned	Start Year	End Year
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	Completed (in Reporting Year)	Replaced once-through water cooled air conditioning system at Administration Building with a split ductless air conditioning system.		2011	2012

**School District 38 - Richmond  
Greenhouse Gas Emissions by Source  
for the 2012 Calendar Year (tCO<sub>2</sub>e\*)**



**Total Emissions: 7,189**

- 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 2012 (Generated May 28, 2013 3:47 PM)**

Total offsets required: **6,938**. Total offset investment: **\$173,450**. Emissions which do not require offsets: **251** \*\*

\*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.