

# School District #35(Langley)-2010 Carbon neutral Action Report



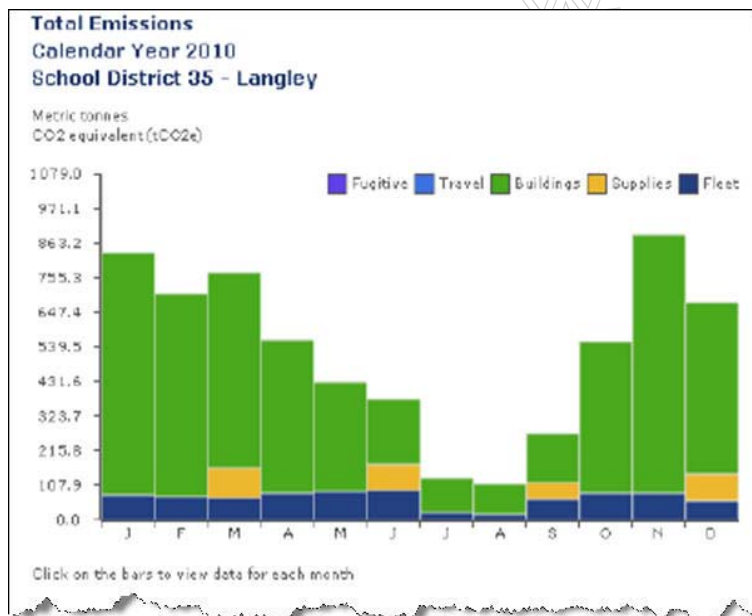
## Executive Summary

This year brought many challenges to our District. With limited funding it was difficult to incorporate new incentives yet we still managed to reduce our energy consumption and carbon footprint over previous years. Langley has continued to implement new lighting upgrades to a few of our schools and has reviewed opportunities for future reductions in anticipation of increased funding.

Our Schools are conscious of the need to make conservation a part of our everyday lives and are creating their own Green teams to meet this challenge. We are looking to increase our recycling to include Organic Waste, Metal and Plastic to reduce burdens on our landfills.

The District has an ongoing Energy Manager program with BC Hydro and is currently updating its energy policies. As well, we have established a Sustainable Energy Management Plan with BC Hydro.

Langley has been approved for a new school and with the requirements of LEED Gold in mind, this will be a school with a smaller carbon footprint. Our eyes are focused on the future for our students.



Direct Emissions	
Mobile Combustion	849.09
Stationary Combustion,	4,693.18
Scope 2 (Indirect) Emissions	
Purchased Energy	570.22
Office Paper	320.65
Total Emissions, Calendar Year 2010	6,433.14
Carbon Neutral or Offset Exempt	558.28
Total for 2010	5,844.86





## Offsets Applied



As required by section 5 of the Carbon neutral Government Regulation, 810.3 tonnes CO<sub>2</sub> of emissions resulting from the operation of school buses of School District #35 were reported as part of our greenhouse gas emissions profile in 2010. However, they were not offset as they are out-of-scope under section 4(2) of the Carbon neutral Government Regulations.

Although this area is exempt, the District, along with assistance from the Ministry, makes every effort to reduce carbon emissions through control devices placed on older models, some in the exhaust and others in the carburetors. There is also end of life replacement which retired the older buses and replace with new. The incorporation of a no idling policy a few years ago reinforces the District's concern for our environment.

## Emissions Reduction Activities

Our District has continued in our promise to reduce GHG emissions and even with the unique challenges faced this year, we are making progress. Lighting upgrades have been done in our schools for many years and will continue until all have the most energy efficient products in place. We have conducted studies, with the assistance of BC Hydro and the aid of pulse meters, to gather information on why our energy consumers are not as efficient as they should be. We have done audits in 5 schools, with the aid of Terasen Gas, to assist us in creating the business case to replace old technology with new.

The installation of Solar panels in 2 schools are now showing promise in reducing our CO<sub>2</sub> emissions. We are looking to the future with our new school and meeting the requirements of LEED Gold to provide the most environmentally friendly school in Langley.

Increased usage of auto shutdowns for our computer systems, along with web meetings have continued to benefit the District and when our contract is up in 2012, we can make significant progress with upgraded photocopiers designed to handle recycled paper.

### Education

We continue to reinforce environmental awareness through educational programs on solar energy. With the installation of the 2 Solar Hot Water installations came the ability to monitor the savings through the web, allowing any student in the District access to view what the power of the sun can do.

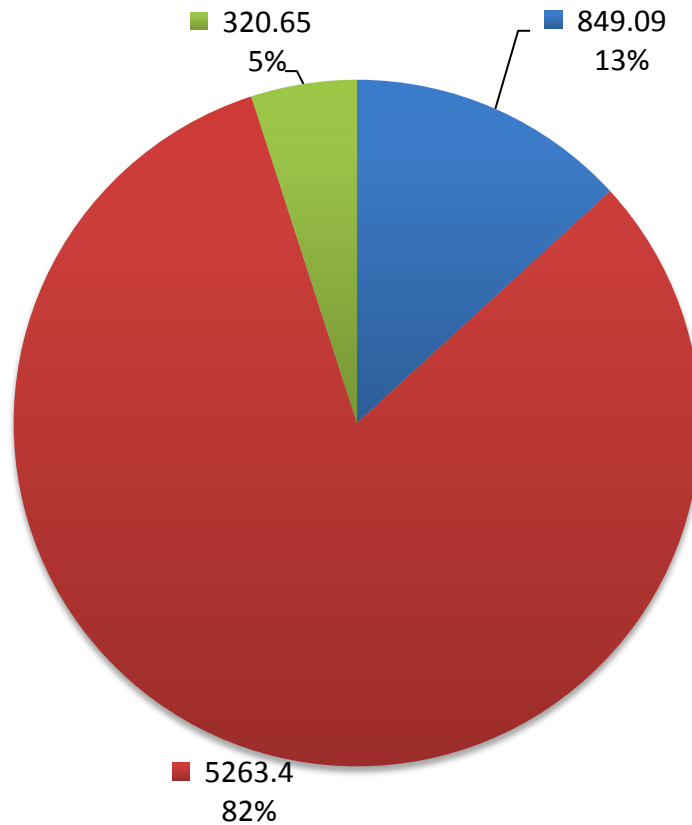
Langley also received educational programs from BC Hydro and is active in all grades in teaching our students the value of conservation.

In 2010, BC Hydro also provided a learning experience for our staff. Both schools receiving lighting upgrades also received a fun, interactive lesson on the benefits provided from the upgrade through the instruction from the BC Hydro Outreach team.



# School District #35 (Langley)

## Greenhouse Gas Emissions by Source for the 2010 Calendar Year (tCO<sub>2</sub>e\*)



**Total Emissions: 6433.14**

- Mobile Fuel Combustion (Fleet and other mobile equipment)
- Stationary Fuel Combustion and Electricity (Buildings)
- Supplies (Paper)

### Offsets Applied to Become Carbon Neutral in 2010

Total offsets purchased: **5844.86**. Total offset investment: **\$146,121.50**. Emissions which do not require offsets: **588.28** \*\*

\*Tonnes of carbon dioxide equivalent (tCO<sub>2</sub>e) is a standard unit of measure in which all types greenhouse gas are expressed based on their global warming potential relative to carbon dioxide.

\*\* Under the *Carbon Government Neutral 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.

## School District #35 (Langley) - 2010 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 (as of 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
<b>Mobile Fuel Combustion (Fleet and other mobile equipment)</b>							
<b>Vehicle fuel efficiency</b>							
Replace vehicles with more fuel-efficient models	Ongoing/In Progress	50	% of vehicles are fuel- efficient models	Lack of Capital funding has prevented movement in this area.	Plan to continue replacing older vehicles will continue as funds are made available.	2010	No End Date (Continuous)
Replace larger vehicles with smaller models according to fleet "right-sizing" principles	Ongoing/In Progress	0	% of vehicles down-sized since start year indicated	Lack of Capital funding has prevented movement in this area.	Plan to continue replacing older vehicles will continue as funds are made available.	2010	No End Date (Continuous)
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	100	% of vehicles are subject to regular maintenance for fuel efficiency	Preventative Maintenance Program in place with authorized mechanics to engage in maintaining fleet.	Plans to continue this operation in the future	2002	No End Date (Continuous)
Replace small maintenance vehicles with more fuel-efficient models	In Development				Unable to implement change this year due to lack of Capital	2011	No End Date (Continuous)
<b>Behaviour change program</b>							
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	60	% of current drivers are trained	2 staff went to train the trainer. All bus drivers given course provided by Eco-Energy Smart driver.	Extend training to light duty fleet drivers	2010	No End Date (Continuous)
Introduce anti-idling policy and/or raise anti-idling awareness for fleet drivers (e.g., signs, stickers, messages)	Ongoing/In Progress			Policy has been in place and enforced for many years. Signage at Schools.	continue reinforcement of policy	2006	No End Date (Continuous)
Encourage carpooling in fleet vehicles	Ongoing/In Progress			Light Duty vehicles contain 2 or more staff on work assignments	continue with car pooling efforts	2000	No End Date (Continuous)
<b>Stationary Fuel Combustion, Electricity and Fugitive Emissions (Buildings)</b>							
<b>Planning/management</b>							
Enrol in a building energy benchmarking program (e.g., GREEN UP)	In Development			Baseline intensity has been calculated for all sites at 2007 figures. This allows for monitoring and improving existing numbers.	At this time all benchmarking has been done internally although the School Based Energy managers in BC have been developing their own baseline for Schools	2007	No End Date (Continuous)
Reduce office space (square meters) per employee	Ongoing/In Progress			Closure of 1 school and incorporating staff and students into another to reduce overhead and energy consumption.	Current lease property of Langley College looking to move into an existing school and eliminate lease.	2010	2011
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	Ongoing/In Progress	30	% of buildings have a real time metering system installed	Pulse metering in at 12 sites for Natural Gas. Installation of new Electrical Pulse Revenue Meter at 1 High School this year. 1 High School and 1 Elementary school installed with 10 load meters each.	If program is successful and capital is available, we may move forward with another school for an electrical pulse meter	2009	No End Date (Continuous)
<b>Owned buildings</b>							
Achieve LEED NC Gold certification at a minimum for new construction or major renovations	In Development			Planning phase of new school being built in North langley	Plan development has been based on LEED Gold standards	2010	2012
Incorporate integrated design process into new construction or during renovations of owned buildings	Ongoing/In Progress	25	% of buildings built or renovated since start year indicated used the integrated design process	Installation of Solar Hot Water systems at two locations. During upgrade at one site, existing DHW was upgraded to on-demand hot water.	Lifecycle replacement brings upgrade to on demand DHW.	2009	No End Date (Continuous)

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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress	51	% of owned buildings have undergone energy retrofits since start year indicated	Lighting retrofits done in 2 schools. T12to T8 and removal of magnetic ballasts to electronic	Natural Gas audits completed on 5 schools and moving forward with lighting audits on remaining T12 schools	2010	No End Date (Continuous)
<b>Retrofitting owned buildings</b>							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	2	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	Audits completed on 5 schools. When funding permits, upgrades will be done. Lifecycle replacements would automatically bring in high efficiency boilers.	Unable to do more than repairs this year due to lack of funding.	2010	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	100	% of retrofits since start year indicated had lighting systems upgrades	Two schools started this year with completion at the end of March 2011.	Audits will be done on the balance of schools that require upgrades	2010	2011
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	100	% of retrofits since start year indicated had control system upgrades or adjustments	all lighting upgrade include sensor controls.	Occupancy sensors included in all rooms during lighting upgrades	2010	2011
Install an on-site renewable energy demonstration project	Ongoing/In Progress	30	% of retrofits since start year indicated had on-site renewable energy components	Solar panels installed on two High Schools. Assist with DHW for site. Students and staff able to monitor throughout the District	Continuous Optimization provided pulse meter for electrical at another High School provided needed information on consumption and creating efficiencies in the systems	2009	2011
<b>IT power management</b>							
Install power management software which shuts down computers outside of regular business hours	Ongoing/In Progress	80	% of computers shut down automatically outside of regular business hours	We use deepfreeze or built-in OS to do this.	ongoing	2008	No End Date (Continuous)
Implement server virtualization	In Development	0	% of servers have been virtualized since start year indicated	Still in test mode	Some servers will be virtualized	2012	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	80	% of computers have auto-sleep settings applied	Configured this way by default	ongoing	2008	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	In Development				We prefer fax machines be stand-alone. Our copier contract will expire in 2012 and that is when we will have them be printers too.	2012	No End Date (Continuous)
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Completed in 2010	80	% of devices have auto-sleep settings applied	Printers are always configured this way.	ongoing	2012	2013
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress			Not possible to keep track of this but all new models are purchased Energy Star.		2008	No End Date (Continuous)
<b>Appliances and electronic devices</b>							
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress	100	% of fridges are ENERGY STAR rated	Purchasing policy has Energy Star requirements built in.	continue process	2009	No End Date (Continuous)
Replace other appliances or electronic devices with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress			Purchasing policy has Energy Star requirements built in.	reduce amount of appliances in our schools	2009	No End Date (Continuous)
<b>Behaviour change program</b>							



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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)		Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Help staff reduce personal energy use through "workstation tune-ups"	Ongoing/In Progress			On going education of staff with regards to energy conservation. Webpage created in 2009 to assist	On going process	2009	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			Notice provided to Principals on value of unplugging small appliances.	continuation of practice	2009	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress			Notice provided to Principals on value of closing the blinds both for security and reducing loss of heat in cold weather.	Routine reminders sent out but this is normal practice	2008	No End Date (Continuous)
Encourage staff to use air dry setting on dishwashers	Ongoing/In Progress			Energy Challenge in 2009 started the awareness campaign	ongoing reminders on website	2009	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress			provide ongoing training on override controls to supply time limited heat to classrooms. Done in each school with retrofits	continue process	2010	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress			BC Hydro provides Education to students each year and the information is also provided on District web page.	continue promoting	2009	No End Date (Continuous)
Promote hot water conservation	Ongoing/In Progress			DHW shut down when schools not in session. Chemicals used by Custodial do not require hot water for summer clean	continue practice	2008	No End Date (Continuous)
<b>Supplies (Paper)</b>							
<b>Paper Type</b>							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	13	% of total paper purchased contains 30% recycled content	Continue to make 30% recycled content paper available for schools to purchase	Under contract until late 2012 with copiers and unable to introduce higher levels of recycled paper as current equipment will not handle.	2009	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	0	% of total paper purchased contains 100% recycled content	Will address in new photocopier supply contract once current contract expires in 2012.	Under contract until late 2012 with copiers and unable to introduce higher levels of recycled paper as current equipment will not handle.	2012	No End Date (Continuous)
<b>Printer/document settings</b>							
Switch networked printers and photocopiers to automatic double-sided	In Development			Where we can, this has been done. We have older copiers that have limited abilities. We have initiated default print to document writers therefore staff must select a printer - heightening awareness.	new contract in the fall of 2012 will bring about significant controls. RFP will incorporate every energy/emmission savings we can install.	2009	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			Sharepoint in use since 2008	Expand use	2008	No End Date (Continuous)
Use electronic document library for filing common documents	Ongoing/In Progress			Laserfiche in use since 2007	at required capacity already, no plans to expand	2007	No End Date (Continuous)
Post materials online that were previously printed	Ongoing/In Progress			Being done wherever possible	Expand use	2008	No End Date (Continuous)
<b>Behaviour change program</b>							
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress			The District communication centre allows sharing of documentation. Incorporation of web based training is ongoing.	continue process	2009	No End Date (Continuous)
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress			When possible - templates are created and process cleaned up to reduce amount of paper generated.	ongoing	2007	No End Date (Continuous)

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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
Encourage re-use of scrap paper	Ongoing/In Progress		Our Print Shop takes all scrap paper and makes them into memo pads for distribution throughout the District	continue practice	2007	No End Date (Continuous)

## School District #35 (Langley) - 2010 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 organizations can optionally use this section to report on actions that will help British Columbia meet its provincial greenhouse gas reduction targets, engage the public, and improve environmental sustainability across all aspects of their organization.

Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
<b>Business Travel</b>						
<b>Virtual meeting technology</b>						
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	In Development		Used Elluminate wherever possible	Purchase of Lync and use of Elluminate	2012	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	In Development			Waiting for financial structure to improve in order to proceed with any future development in this area.	2013	No End Date (Continuous)
<b>Behaviour change program</b>						
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress		web meetings take place with external contracts. Internal meetings between schools still take place in person.	develop internal web conferences is in progress	2012	No End Date (Continuous)
<b>Education, Awareness, and Engagement</b>						
<b>Staff Professional Development</b>						
Support green professional development (e.g., workshops, conferences, training)	In Development		working with Green Team at Walnut Grove Secondary regarding recycling possibilities.	Speaking with SuperSave Disposal to work out deal. Township may join in.	2010	No End Date (Continuous)
<b>Staff awareness/education</b>						
Provide education to staff about the science of climate change	Ongoing/In Progress		Professional Development discussion with one Union group	looking to contact other groups in the District	2010	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress		Trades are aware of our practices and support maintenance of conservation. Working with other groups towards this process	Want to develop conservation teams at every school in district	2009	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress		webtips on District Environment page	website established and updated quarterly or as needed	2009	No End Date (Continuous)
<b>Client/public awareness/education</b>						
Provide education to clients/public about the science of climate change	Ongoing/In Progress		Access to BC Hydro education series. Webpage on Energy Conservation set up.	continue and expand where possible.	2011	No End Date (Continuous)
Provide education to clients/public about the conservation of water, energy, and raw materials	Ongoing/In Progress		BC Hydro Education series on Energy Conservation. Township of Langley provides waste management education to students	continue and expand education by introducing re-direction of waste education.	2011	No End Date (Continuous)
<b>Other Sustainability Actions</b>						
<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		When retrofitting sites, all washroom facilities are upgraded to low flush and other water saving devices. DHW tanks being replaced with on-demand water systems. Solar panels installed at two sites.	ongoing process	2002	No End Date (Continuous)
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	Ongoing/In Progress		Preventative Maintenance program in place for filter replacement. Practice in place to replace, as funding permits, existing fixtures with low water consumption fixtures.	ongoing process	Started before 1995	No End Date (Continuous)



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Action	Status (as of 12/31/10)	Performance to Date (as of 12/31/10)	Steps Taken in 2010	Steps Planned for 2011 -2013	Start Year	End Year
<b>Waste reduction/diversion</b>						
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress		pickup of hazardous chemicals that may be in schools. This is done annually to ensure proper disposal. Lighting upgrades - ongoing also eliminating pcbs in old balasts.	continuation of ongoing process	Started before 1995	No End Date (Continuous)
<b>Building construction, renovation, and leasing</b>						
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	In Development		This has been in process for years in attempts to reduce costs.All major lighting upgrades include diversion of Lights & ballast to keep from landfill.	reviewing diversion of waste to reduce GVRD lift charges. Looking to divert Organic, Plastic & Glass waste first.	Started before 1995	No End Date (Continuous)
<b>Indoor air quality</b>						
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Ongoing/In Progress		Signage up at Board Office	Working to encourage schools to do the same	2008	No End Date (Continuous)
Incorporate low volatile organic compounds (VOCs) standards into procurement policy for products such as paints, carpets, and furniture	Ongoing/In Progress		All paint products are water based low VOC. Water base refinish on wood gym floors and elimination of carpets in District. Those areas that do receive carpets are all low VOCs	on going	2006	No End Date (Continuous)
<b>Commuting to and from home</b>						
Offer staff a compressed work week	Ongoing/In Progress		Inforce for summer work. Maybe extended into School year/	ongoing	2002	No End Date (Continuous)