

Carbon Neutral Action Report School District No. 39 (Vancouver)

Executive Summary

The Vancouver Board of Education has long been recognized as one of the lowest energy users by area of any school district in the province. This achievement is largely the result of an on-going commitment to energy and resource conservation spanning more than two decades.

Since 2005, with support from BC Hydro and Natural Resources Canada, this commitment has involved energy upgrade projects at our two largest campuses (Vancouver Technical Secondary and Britannia Complex - totalling 600,000 sq.ft.) as well as numerous others. In 2008 we opened Dickens Elementary, our first LEEDs Silver elementary school, and incorporated sustainability design elements into the curriculum.

In the transition from a focus on energy management to a more encompassing focus on sustainability, the district is supporting students and staff in various endeavours. For example, in April 2008, the district supported a student led summit on sustainability which led to the inclusion of sustainability in the district plan.

This transition will continue in 2009 with an enhanced district wide recycling program and pilot composting programs at specific sites.

In 2009, the district has shown their commitment towards sustainability by hiring a Sustainability Coordinator to work with schools on various programs including incorporating sustainability into the curriculum. The district continues to work in partnership with BC Hydro to acquire a Manager of Facilities - Climate Action. This position will be the district's liaison to outside agencies to manage and report on greenhouse gas and carbon footprint reduction strategies.

The district will continue with a variety of sustainability projects, including energy and resource conservation projects.

Objectives

- Develop a culture of sustainability and environmental awareness throughout the organization involving students and staff
- Set a living example of social responsibility for students
- Improve the learning and working environment for students and staff
- Coordinate energy and resource upgrade projects with seismic projects to reduce the impact on schools
- Reduce expenditures for energy and resources

Part 1: Actions Taken to Reduce Greenhouse Gas Emissions in 2008

Overview

Construction of the district's first new LEEDs Silver school, Dickens Elementary, was completed in Spring 2008.

A number of student programs that promote sustainability were supported including "Destination Conservation", "Power Smart Students", "Check Your Head", and "Sustainable Schools".

Alternative methods of travel for staff and students were encouraged including "Walk to School Week", "One Day, One School", "Commuter Cycling Skills" workshops and the "Employee Bus Pass" program.

Composting and recycling programs continue to operate at various sites throughout the district.

Energy upgrade programs, including lighting and mechanical upgrades, were implemented at various schools. An outside agency was utilized to identify energy reduction opportunities and district staff completed upgrades to 13 schools. In addition, lighting upgrades were completed at 4 other schools. Various washroom upgrades and water conservation initiatives were completed at 11 schools.

1.1 Mobile Fuel Combustion

| Action | Action Taken | Outcome/Performance Measure | Notes Clarifying Action Taken |
|---|--------------|--|--|
| Replaced # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid | In progress | | Purchased larger capacity delivery trucks to reduce number of visits |
| Provided driver training to reduce fuel use | In progress | | "Mission Possible" training program to educate drivers on driving safely, fuel efficiently and responsibly |
| Initiated new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups) | In progress | | Done on an on-going basis |
| Established anti-idling behaviour change program (e.g. signs, stickers, messages) | Complete | | Installed signs and GPS monitoring devices to track idling in district vehicles |
| Encouraged car pooling in fleet vehicles | In progress | | Routes for trades people have been created to minimize travel within specified areas |
| Encouraged use of public transit/active transportation | In progress | Reduce the amount of vehicles being driven to school or work | Employee Bus Pass program, "Walk to Work Week" |
| Changed to manual lawn and yard maintenance equipment | In progress | | Manual weeding is done instead of using pesticides |
| Installation of GPS units in fleet vehicles | Complete | | |
| Replaced a number of inefficient grounds equipment with more environmentally friendly equipment | In progress | | |
| All diesel powered district vehicles have been switched to bio-diesel | In progress | | |
| Promoted commuter cycling skills | In progress | Reduce the amount of vehicles being driven to school or work | Held "Commuter Cycling Skills" workshops |

1.2 Stationary fuel combustion and electricity

| Action | Action Taken | Outcome/Performance Measure | Notes Clarifying Action Taken |
|--|--------------|---|---|
| Supplied power bars – to turn off power to non-essential items when not in use (e.g. phone chargers) | In Progress | Save electricity through the reduction of phantom power | |
| Undertaken Monitor turn-off challenge | In Progress | Save electricity | |
| Replaced # computers with EnergyStar models | In Progress | Save electricity | |
| Asked staff to close blinds daily | In Progress | Save energy through a reduction in thermal gain | |
| Turned off lights in unused rooms | In Progress | Save electricity | |
| Replaced Refrigerators (EnergyStar rated appliance) | In Progress | Save electricity | |
| Replaced other appliances (with EnergyStar rated appliance) | In Progress | Save electricity | |
| Installed multi-function devices (and removed stand-alone printers/faxes) | In Progress | Save electricity | |
| Replaced standard bulbs with CFLs | In Progress | Save electricity | |
| Installed motion activated lights | In Progress | Save electricity | 3 schools: Dickens, Cook, Vancouver Technical |
| Undertaken lighting retrofit | In Progress | To reduce the district's overall hydro consumption by more than 1,000,000 kwh. | 17 schools: Nootka, Southlands, Wolfe, Churchill, Hamber, Tecumseh, Trudeau, Van Horne, Hastings, King George, U-Hill Elementary, Magee, Roberts, Waverly, False Creek, Thunderbird and Fraser |
| Implemented server virtualization | In Progress | | Implemented in Education Centre |
| Utilized desk-top power management settings on computer | In Progress | Save electricity | Shutdown software has been installed on all computer labs in schools |
| Initiated corporate computer shut-down/wake-up for maintenance | In Progress | Save electricity | Shutdown software has been installed on all computer labs in schools |
| Unplugged unused equipment | In Progress | Save electricity | Shut Down Checklist is followed by building engineers during school breaks |
| Undertaken building energy audit at LOCATION(s) | In Progress | This was done to allow the district to apply for funding for energy upgrades through PSECA. Since we were not successful we are looking at other funding sources. | 4 schools: Windermere, Point Grey, Templeton, Norquay |
| Installed auto dimming lights responding to outside lighting | In Progress | To test newer more efficient equipment for future projects | Churchill Sec. |
| Installation of web-based DDC's for heating plants | In Progress | | 13 schools - Begbie, Dickens, Churchill, Collingwood, Elsie Roy, Hastings, Magee, Roberts, Thunderbird, Trudeau, University Hill Elementary, VanHorne, Van Tech + 10 more over the next year - Grenfell, McKechnie, Osler, Brock, Nelson, Cook, Grandview, Ecole Bilingue, Beaconsfield, Maple Gove |
| Upgrades of heating plants | In Progress | Save natural gas | 2 schools: Vancouver Technical, Trafalgar |
| Installation of new Dryatron | In Progress | Save natural gas | Britannia pool |
| Installed additional insulation | In Progress | Save natural gas | Nelson attic |

| 1.3 Supplies | | | |
|--|---------------------|--|--|
| Action | Action Taken | Outcome/Performance Measure | Notes Clarifying Action Taken |
| Committed to use 30% recycled paper | In Progress | Reduce the use of virgin paper | |
| Initiated automatic double sided printing | In Progress | Reduce the use of paper | New equipment is being purchased with double sided functionality |
| Developed document library (online and one printed copy) for large documents | In Progress | Reduce the reliance on hard copies. | Building Standards Manual, Operations Handbook, Training Manuals, etc. |
| Used collaborative software to edit on-line | In Progress | Reduce paper | |
| Re-used non-confidential scrap paper | In Progress | Reduce paper | Made into note pads |
| Used laptops/tablets | In Progress | Reduce paper | |
| Actions on non-paper related supplies: | | | |
| Purchased cradle to cradle goods | In Progress | Ensure materials are recycled in a proper manner. | Added to RFPs - assessed on each occasion |
| Encouraged re-use of furniture and equipment | In Progress | Reduce the amount of new equipment purchased. | Available through VSB Stores |
| Switched to soy based inks and water based chemicals | In Progress | Reduce the amount of harmful chemicals introduced into the waste stream. | |
| 1.4 Travel | | | |
| Action | Action Taken | Outcome/Performance Measure | Notes Clarifying Action Taken |
| Trained staff in the use of Live Meeting (or other desktop collaborative software) | In progress | | |
| Installed Video Conferencing facilities | In progress | | Smart Boards have been installed in 3 meeting rooms at the Education Centre, and over 100 have been purchased for elementary and secondary schools |
| Car pool incentive on monthly parking charge | In progress | | |
| 1.5 Employee Engagement | | | |
| Action | Action Taken | Outcome/Performance Measure | Notes Clarifying Action Taken |
| National Resources Canada training for building engineers | Complete | Allow building operators to find ways to reduce energy at each facility. | "Spot the Energy" training |
| 1.6 Sustainability Actions (others) | | | |
| Action | Action Taken | Outcome/Performance Measure | Notes Clarifying Action Taken |
| Took water conservation measures – low flow showers or toilets, fix leaks | In Progress | Reduce water consumption in the district. | Upgrades at various schools |
| Reduced/replaced bottled water with filtered or refrigerated water | In Progress | Reduce the amount of water bottles brought into the Ed Centre. | Water coolers in the Education Centre |
| Improved recycling measures | In Progress | Reduce the amount of solid waste going to the landfill | Pilot program at Education Centre |
| Supported composting | In Progress | Reduce the amount of solid waste going to the landfill | |
| Used re-usable dishes | In Progress | Reduce the amount of solid waste going to the landfill | |
| Purchased green cleaning products | In Progress | The use of safer less harmful chemicals and the use of more recycled paper products reduces the impact on the environment. | Custodial cleaning supplies |

| | | | |
|--|-------------|--|--|
| Used green (low-e paints) | In Progress | | |
| Supported sustainable procurement practices | In Progress | | |
| Adopted low-carbon contracting practices | In Progress | | Sustainability is one of the components of the vendor evaluation process |
| Reduction of VOC's in gym finishes | In Progress | Reduce strong chemicals improving staff and student safety. | |
| Student Sustainability Summit | Complete | Attended by over 100 students and staff. This resulted in sustainability being included in district directions | A sustainability summit was run by students which also involved trustees and district decision makers to promote sustainability within the district. |
| Destination Conservation | In Progress | a pilot project which promotes awareness of conservation issues | 13 schools: Beaconsfield, Begbie, Elsie Roy, Franklin, Henderson Annex, Kerrisdale, Killarney, Byng, Tennyson, McBride, Nootka, Q. Elizabeth, Tecumseh |
| Check Your Head | In Progress | | 11 schools involved in this pilot sustainability project - King George, Roberts, Roberts Adult Centre, Elsie Roy, Roberts Anx, Byng, Q. Eliz, Kitchener, Q. Eliz Anx, Q. Mary, Jules Quesnel |
| Changed the sprayer nozzles in all school lunchroom kitchens | Complete | Reduced the amount of water use. | |

Part 2: Plans to Continue Reducing Greenhouse Gas Emissions 2009 -- 2011

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|-----------------|---|--|--|
| Overview | <p>The district continues to research and implement new strategies that promote sustainability. A Sustainability Coordinator has been hired and a Manager of Facilities - Climate Action will be hired in 2009. The two positions will form the basis of a district sustainability team to work with schools on promoting sustainable initiatives and to incorporate sustainability into the educational curriculum.</p> <p>A number of student programs that promote sustainability will continue to be supported including "Destination Conservation", "Power Smart Students", "Check Your Head", and "Sustainable Schools".</p> <p>Alternative methods of travel for staff and students continue to be encouraged including "Walk to School Week", "One Day, One</p> | | |
|-----------------|---|--|--|

2.1 Mobile Fuel Combustion

| Action | Action Planned | Outcome/Performance Measure | Notes Clarifying Action Taken | Timeframe |
|--|----------------|---|--|--------------------------|
| Replace # of TYPE OF VEHICLE with MORE EFFICIENT VEHICLE/Hybrid | In progress | | Will replace gas powered vehicles with hybrids wherever possible | as vehicles are replaced |
| Provide driver training to reduce fuel use | In progress | | | |
| Initiate new fleet maintenance program (could include – changing filters, checking tire pressure, regular check-ups) | In Progress | | | |
| Establish anti-idling behaviour change program (e.g. signs, stickers, messages) | In Progress | | | |
| Encourage use of public transit/active transportation | In Progress | Reduce the number of vehicles being driven to work/school | Employee bus pass program | |
| Change to manual lawn and yard maintenance equipment | In Progress | | | |
| Replacement of propane Zamboni to electric | In progress | Reduce the amount of carbon produced by changing from propane to electricity. | | for the Olympics |
| Promoted commuter cycling skills | In Progress | Reduced the amount of vehicles being driven to schools and work | "Commuter Cycling Skills" workshops | 2008-2009 |

2.2 Stationary Fuel Combustion (including electricity)

| Action | Action Planned | Outcome/Performance Measure | Notes Clarifying Action Taken | Timeframe |
|--|----------------|---|--|-----------|
| Supply power bars – to turn off power to non-essential items when not in use (e.g. phone chargers) | In Progress | Reduce the consumption of electricity by reducing phontom power | | |
| Undertaken Monitor turn-off challenge | In Progress | Reduce the consumption of electricity | | |
| Replace # computers with EnergyStar models | In Progress | Reduce the consumption of electricity | | |
| Ask staff to close blinds daily | In Progress | Reduce heat loss and improve security | | |
| Use air dry setting on dishwashers | | | | |
| Encourage staff to use stairs | In Progress | Improve the health of staff | "10,000 Steps per Day" challenge | Mar-09 |
| Turn off lights in unused rooms | In Progress | Reduce the consumption of electricity | | |
| Replace Refrigerators (EnergyStar rated appliance) | In Progress | Reduce the consumption of electricity | | |
| Replace other appliances (with EnergyStar rated appliance) | In Progress | Reduce the consumption of electricity | | |
| Install multi-function devices (and remove stand-alone printers/faxes) | In Progress | | | |
| Replace standard bulbs with CFLs | In Progress | Reduce the consumption of electricity | | |
| Install motion activated lights | In Progress | Reduce the consumption of electricity | | |
| Undertake lighting retrofit | In Progress | | We hope to undertake lighting retrofits at 9 additional schools | |
| Implement server virtualization | Planned | | Roll out to schools | 2009-2011 |
| Utilize desk-top power management settings on computer | Planned | Reduce the consumption of electricity | Reviewing SMS software for installation on all computers | 2009-2011 |
| Initiate corporate computer shut-down/wake-up for maintenance | In Progress | Reduce the consumption of electricity | Shutdown software to be installed on all administrative computers | 2009-2010 |
| Unplug unused equipment | In Progress | Reduce the consumption of electricity | | |
| Apply for LEED existing building rating | Planned | | Depending on information produced by "Facility Conditional" audits | 2010-2011 |
| Undertake building energy audit at LOCATION(s) | Planned | | As part of the "Facility Conditional" audits at 60 schools | 2009 |
| Initiate or complete a building energy retrofit | In progress | | As funds and information becomes available | 2010-2011 |
| Upgrade of heating plant | In Progress | | Trafalgar Elem. | 2009 |
| Installation of web-based DDC's for heating plants | In Progress | | 10 over the next year - Grenfell, McKechnie, Osler, Brock, Nelson, Cook, Grandview, Ecole Bilingue, Beaconsfield, Maple Gove | 2010 |

2.3 Supplies

| Action | Action Planned | Outcome/Performance Measure | Notes Clarifying Action Taken | Timeframe |
|--|----------------|-----------------------------|--|-----------|
| Commit to use 30% recycled paper | In Progress | | | |
| Initiate automatic double sided printing | In Progress | | | |
| Develop document library (online and one printed copy) for large documents | In Progress | | Building Standards Manual, Operations Handbook, Training Manuals, Contractor Safety Manual, etc. | |
| Re-use non-confidential scrap paper | In Progress | | | |
| Use laptops/tablets | In Progress | | | |
| Actions on non-paper related supplies: | | | | |
| Purchase cradle to cradle goods | In Progress | | | |
| Encourage re-use of furniture and equipment | In Progress | | | |
| expanding the recycling program to district-wide | In progress | | | 2009-2010 |
| provide information on paper usage and comparison to other schools | In progress | | | 2009-2010 |

2.4 Employee Engagement

| Action | Action Planned | Outcome/Performance Measure | Notes Clarifying Action Taken | Timeframe |
|--|----------------|-----------------------------|--|-----------|
| Provide conservation education | In Progress | | "Spot the Energy" seminar for custodial staff | 2009 |
| Develop Green Teams | In progress | | Upon filling Sustainability Coordinator and Climate Action Manager positions | 2009-2011 |
| Support Green Teams (resources) | In progress | | Upon filling Sustainability Coordinator and Climate Action Manager positions | 2009-2011 |
| Provide green tips | In progress | | Upon filling Sustainability Coordinator and Climate Action Manager positions | 2009-2011 |
| Support professional development | In progress | | Upon filling Sustainability Coordinator and Climate Action Manager positions | 2009-2011 |
| Add a green work goal to performance management | In progress | | Upon filling Sustainability Coordinator and Climate Action Manager positions | 2009-2011 |
| Two new positions have been created to lead the district sustainability team | In progress | | Sustainability Coordinator and Climate Action Manager positions | 2009 |

2.5 Sustainability Actions (others)

| Action | Action Planned | Outcome/Performance Measure | Notes Clarifying Action Taken | Timeframe |
|---|----------------|---|--|-----------|
| Take water conservation measures – low flow showers or toilets, fix leaks | In progress | | | |
| Reduce/replace bottled water with filtered or refrigerated water | In progress | | | |
| Improve recycling measures | In progress | Pilot program with full implementation by June 2009 | 17 Schools: Beaconsfield, Byng, Carleton, Churchill, Elsie Roy, Franklin, Kerrisdale, King George, MacCorkindale, Point Grey, Q. Elizabeth Annex, Quesnel, Roberts, South Hill E.C., Templeton, Tennyson, Windermere | 2009 |
| Support composting | In progress | | 3 schools to be identified | 2009 |
| Use re-usable dishes | In progress | | | |
| Purchase green cleaning products | In progress | | | |
| Use green (low-e paints) | In progress | | | |
| Support sustainable procurement practices | In progress | | | |
| Destination Conservation | In Progress | a pilot project which promotes awareness of conservation issues | 13 schools: Beaconsfield, Begbie, Elsie Roy, Franklin, Henderson Annex, Kerrisdale, Killarney, Byng, Tennyson, McBride, Nootka, Q. Elizabeth, Tecumseh | |
| Check Your Head | In Progress | | 11 schools will continue with this pilot sustainability project - King George, Roberts, Roberts Adult Centre, Elsie Roy, Roberts Anx, Byng, Q. Eliz, Kitchener, Q. Eliz Anx, Q. Mary, Jules Quesnel | |