

# School District 49 (Central Coast)

## 2010 Carbon Neutral Action Report



### Executive Summary

School District No. 49 (Central Coast) has been contributing to carbon neutrality for the past several years by investing in equipment replacement and upgrades, building renovation and upgrades, and working with employees and students to reduce energy consumption. We have worked collaboratively with other community organizations in implementing conservation programs that will be environmentally and economically beneficial and sustainable for the entire community.

A key objective for School District No.49 (Central Coast) is educating employees and students to become socially responsible community leaders by promoting behavioural changes for environmental sustainability for today and into the future. By introducing environmental education programs we hope to enable learners to use critical thinking to solve problems, make informed decisions, understand the potential consequences of decisions and to take actions to ensure the sustainability of the environment. These programs should allow students and employees to understand personal, local and global environmental issues, develop respect for self and all living species, and develop skills necessary for learning about and understanding the environment so they feel empowered to take personal actions, and continue learning throughout their lives.

### Overviews

During 2010, School District 49 (Central Coast) and the communities within the Bella Coola Valley experienced some harsh conditions that were unforeseen.

1. During the summer months, forest fires were burning out of control in the Bella Coola Valley. The communities in the valley were on evacuation standby notification, school facilities were used as the emergency command centres, and the only highway in and out of the valley was cut off for approximately four weeks.
2. In late September, severe heavy rainfall burst the dikes, rivers banks overflowed, rock slides occurred at about a dozen points along the highway, the airport was flooded due to dike bursting and homes and buildings suffered major flood damage. This flooding cut off the community of any air transportation for approximately four weeks, and road transportation for approximately eight weeks. It is estimated that all road, repair to dikes, and repairs to river banks will be completed by the fall of 2011. An enormous amount of electricity and energy was consumed to dry out water damaged homes and buildings.

## 2010 Greenhouse Gas Emissions

• Mobile Fuel Combustion (Fleet and other mobile equipment) =	87.62	tonnes CO2e
• Stationary Fuel Combustion and Electricity (Building) =	315.60	tonnes CO2e
• Supplies (Paper) =	0	tonnes CO2e
• Fugitive Emissions =	0	tonnes CO2e
<u>Total 2010 Greenhouse Gas Emission</u>	<u>403.22</u>	<u>tonnes CO2e</u>

It was estimated that stationary fugitive emissions from cooling do not comprise more than 0.01% of School District 49 Central Coast 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 School District 49 Central Coast total greenhouse gas emissions profile.

## Offset Applied to Become Carbon Neutral in 2010

• Total 2010 Greenhouse Gas Emissions =	403.22	tonnes CO2e
• Emission Which Do Not Require Offsets =	<58.97>	tonnes CO2e
<u>Total Offset Purchased</u>	<u>344.25</u>	<u>tonnes CO2e</u>
<u>Total Offset Investment (before taxes)</u>	<u>\$8,606.25</u>	<u>cdn</u>

As required by section 5 of the Carbon Neutral Government Regulation, 58.97 tonnes CO2e of emissions resulting from the operation of school busses of were reported as part of our greenhouse gas emissions profile 2010. However, they were not offset as they are out-of-scope under section 4 (2)(c) of the Carbon Neutral Government Regulation.

## Action Taken to Reduce Greenhouse Gas Emission Activities in 2010

- Began replacement of an aging secondary school gym with a new 560 square meter energy efficient gym
- Installed auto-sleep features on all new computers purchased
- Continued focus on building enhancements by caulking of windows and replacing old exterior doors
- Continued sealing all leaks and increasing insulation
- Replace all light bulbs with CFL bulbs
- Continue encouraging staff to utilize the duplex features when printing and copying
- Implemented SMARTTools to gather carbon consumption (tCO2e) data

## **Plans to Continue Reducing Greenhouse Gas Emissions 2011 – 2013**

- Develop a paper recycling program for the school, and possibly expand for the entire Bella Cool Valley (\*Note; currently there is no recycling program in the Bella Coola Valley due to the transportation cost to vendors\*)
- Have submitted a capital request to replace two aging and with high mileage, passenger busses with new energy efficient passenger busses
- Have submitted a capital request to replace 60+ year old secondary school that is energy inefficient and prone to flooding during spring run-off and fall rains, with a new energy efficient school that is built above grade
- Have submitted a capital request to upgrade and install a Heat Pump System at one of the schools
- Continue expansion of web conferencing to reduce air travel expenses and paper supplies
- Continue expansion of web conferencing in the classroom to enhance classroom education
- Continue expansion of online or electronic text books to reduce the needs for paper text books, plastic audio and video products
- Continue computer and peripheral replacement program with Energy Star computers and peripherals
- Implement document management system to reduce storage space
- Implement a work flow system to eliminate the physical movement of paper
- Continue analysis to best utilize existing classroom spaces
- Expand building trades program to educate students with building energy efficient and seismically approved wood structures

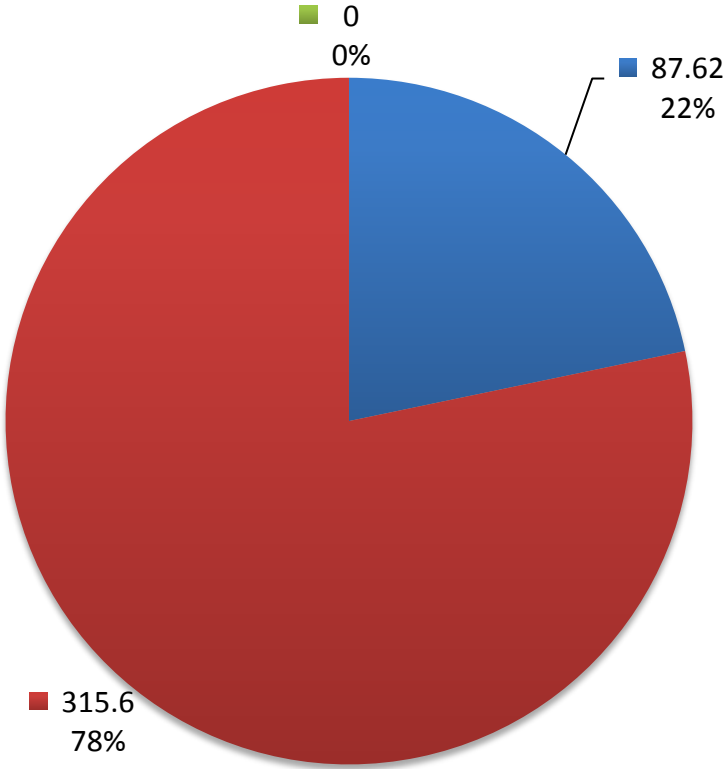
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Robyn Willis  
Chairperson

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Denise Perry  
Superintendent/Secretary Treasurer

# School District 49 Central Coast Greenhouse Gas Emissions by Source for the 2010 Calendar Year (tCO<sub>2</sub>e\*)



**Total Emissions: 403.22**

- 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: **344.25**. Total offset investment: **\$8,606.25**. Emissions which do not require offsets: **58.97** \*\*

\*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.

# School District 49 Central Coast - 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	30	% of vehicles are fuel- efficient models	No vehicles in the fleet was replaced in 2010	The School District has submitted Capital request to replace 2 aging and energy inefficient Passenger Buses (this is subject to Ministry approval for capital expenditure). We will evaluate replacing aging and inefficient maintenance and passenger vehicles as budget permits.	2008	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	We perform regular scheduled maintenance and inspections of all our passenger busses, maintenance vehicles, and passenger vehicles.	Ongoing regular scheduled maintenance, and seeking new maintenance ideas that can be integrated with existing practices.	Started before 1995	No End Date (Continuous)
<b>Behaviour change program</b>							
Encourage carpooling in fleet vehicles	In Development			Have encouraged car pooling where possible	To continue encouragement of car pooling	2008	No End Date (Continuous)
Promote alternatives to fleet vehicle travel where possible (e.g., bicycles, public transit, walking)	In Development			Given the large rural geographical area of School District 49, and distances between educational sites, some alternative transportation mode is not feasible (e.g., bicycle, walking). There is also very limited public transportations available. The school district is continuing discussions to promote alternative transportation	To continue discussion with all stakeholders in the Bella Coola Valley	2008	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)	Ongoing/In Progress			Completed setup of Ministry SMARTTool Carbon data gathering tool, and have completed entry of CO2e for 2010 and 2009	Continual use of SMARTTools to gather CO2e data	2009	No End Date (Continuous)
Reduce office space (square meters) per employee	Ongoing/In Progress			Continued review best utilization of building space	To continually review best utilization of building space	2008	No End Date (Continuous)
<b>Owned buildings</b>							
Establish energy performance baseline for owned buildings	Ongoing/In Progress			Completed setup of Ministry SMARTTool Carbon data gathering tool, and have completed entry of CO2e for 2010 and 2009	To evaluate and analyze data of past years with current years, and to take appropriate discussions	2009	No End Date (Continuous)
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress			Have incorporate plans into new Secondary School Gym replacement. Started in June 2010, estimated completion in Spring 2011	Will incorporate into proposal for new Secondary School Replacement if capital project is approved by the Ministry of Education.	2008	No End Date (Continuous)
<b>Retrofitting owned buildings</b>							
Upgrade mechanical systems (heating, cooling, ventilation) during retrofits	In Development				Will incorporate into proposal for new Secondary School Replacement if capital project is approved by the Ministry of Education	2009	No End Date (Continuous)

## School District 49 Central Coast - 2010 Carbon Neutral Action Report

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
Upgrade lighting systems during retrofits	In Development				Will incorporate into proposal for new Secondary School Replacement if capital project is approved by the Ministry of Education	2009	No End Date (Continuous)
Upgrade/adjust control systems during retrofits	In Development				Will incorporate into proposal for new Secondary School Replacement if capital project is approved by the Ministry of Education	2009	No End Date (Continuous)
Improve building insulation (including windows) during retrofits	In Development				Will incorporate into proposal for new Secondary School Replacement if capital project is approved by the Ministry of Education	2009	No End Date (Continuous)
Install an on-site renewable energy demonstration project	In Development				Will incorporate into proposal for new Secondary School Replacement if capital project is approved by the Ministry of Education	2009	No End Date (Continuous)
<b>IT power management</b>							
Install power management software which shuts down computers outside of regular business hours	In Development			Reviewed existing practices	Will determine what available technological options are available. To be completed in this time frame	2008	No End Date (Continuous)
Implement server virtualization	In Development			Reviewed existing practices and had preliminary discussions	Will determine feasibility and costs to implement.	2008	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	75	% of computers have auto-sleep settings applied	Have implemented auto-sleep feature for all new computers purchased in the organization. Have also encouraged employees and students to turn off computers when not in use and at end of working day.	To ensure all new computers purchased and existing computers have the auto-sleep feature	2008	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Ongoing/In Progress	60	% reduction in printers, copiers, and/or fax machines since start year indicated	Continued replacement of stand alone peripheral with multi functional machines as budget permits.	To replace all stand alones peripherals with multi function	2006	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	40	% of computers are ENERGY STAR rated	All computers purchased in 2010 have been certified Energy Star	To continue replacement of computers with Energy Star certification	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			Ensure all purchases of refrigerators in 2010 were Energy Star	Will ensure all future purchases of refrigerators are Energy Star certified	2008	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			Ensure all purchases of other appliances in 2010 were Energy Star	Will ensure all future purchases of other appliances are Energy Star certified	2008	No End Date (Continuous)
Replace desk lamp incandescent bulbs with compact fluorescent (CFL) bulbs or source more efficient desk lamps for future purchases	Ongoing/In Progress			All lightbulb replaced in 2010 were CFL bulbs	Will ensure all replacement light bulbs are CFL	2008	No End Date (Continuous)
<b>Behaviour change program</b>							
Help staff reduce personal energy use through "workstation tune-ups"	In Development				To complete training and communications to all employees and students during this time frame	2008	No End Date (Continuous)
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress			Have made staff and students aware of unplugging and switching off power bars when not in use	To continue training and communications to all employees and students during this time frame, and to expand practice to other equipments as deemed fit.	2008	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
Ask staff to close blinds at end of work day to reduce heating/cooling demands	Ongoing/In Progress			Have made staff and students aware to close blinds at end of work day	To continue communications to all employees and students during this time frame.	2008	No End Date (Continuous)
Provide reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress			Stickers in place at some worksites	Continue completion of stickers at all worksites and light switches	2006	2011
Promote hot water conservation	Ongoing/In Progress			Have made staff and students aware of hot water conservation	To be complete training and communications to all employees and students during this time frame	2008	No End Date (Continuous)
<b>Supplies (Paper)</b>							
<b>Paper Type</b>							
Purchase 30% post-consumer recycled paper	Ongoing/In Progress	0	% of total paper purchased contains 30% recycled content	Currently the school district is using 0% recycled paper. At this time the cost of 30% recycled paper is greater than 0% recycled due to shipping into Bella Coola Valley	Will continue discussion with suppliers to make cost of 30% recycled paper comparable with 0% recycled	2008	No End Date (Continuous)
Purchase 100% post-consumer recycled paper	Ongoing/In Progress	0	% of total paper purchased contains 100% recycled content	The school district has reviewed the cost of post-consumer recycled paper. At this time recycled paper is greater than 0% recycled due to shipping into Bella Coola Valley	Will continue discussion with suppliers to make cost of post-consumed recycled paper comparable with 0% recycled	2008	No End Date (Continuous)
<b>Printer/document settings</b>							
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress			Have encouraged staff to copy on double side. Continue replacement of printers with double sided trays, or replace printer completely or have not replaced printers but to utilize multi functional copiers which is also a less expensive cost per page printed than stand alone printers.	To replace printers with double sided duplex printers when needed, or not replace printer but to utilize multi-functional copier. Continue promoting double sided photo copying.	2008	No End Date (Continuous)
<b>Electronic media in place of paper</b>							
Use electronic document library for filing common documents	Ongoing/In Progress			Completed evaluation of purchasing and implementing a document management system.	To complete implementation of document management system and work flow system.	2008	2012
Post materials online that were previously printed	Ongoing/In Progress			Have completed development of "Fillable PDF Forms" and have posted on school districts website.	To complete implementation of work flow system so document can be routed electronically.	2008	2012
<b>Behaviour change program</b>							
Encourage staff to hold paperless meetings or presentations (i.e., no handouts)	Ongoing/In Progress			Have completed setup Webex conferencing for training of staff processes remotely. Have setup Smartboards to hold Board Meetings and Educational tools in the classroom. Utilize computers for Board Meetings for Trustees which eliminates paper copies of agendas.	Ongoing	2008	No End Date (Continuous)
<b>Other Paper Supplies Actions</b>							
Switch to electronic fund transfer (EFT) of Accts Payable payments to vendors and electronic payment notification system in place of paper cheques and stubs	Ongoing/In Progress			Have moved all employee to EFT for Accts Payable payments. Have begun switching external vendors to EFT for Accts Payable payments.	Move towards setting up all external vendors with EFT of Accts Payables payments	2008	No End Date (Continuous)

## School District 49 Central Coast - 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.)	Ongoing/In Progress	50	% of computers have web-conferencing software installed	Have held several training sessions and meeting using web conferencing	Expand web conferencing for Board Meetings utilizing Skype. Awaiting network connectivity upgrades from the Ministry in order to expand classroom webc conferencing for educational programs	2008	No End Date (Continuous)
Make desktop web-cameras available to staff	In Development				Setting up Board Office staff with web cams and headset to hold meetings, training sessions, and preliminary interviews.	2011	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Ongoing/In Progress			Completed installation of Smart Boards into Board Meeting room and in various classrooms	Expand web conferencing for Board Meetings and classroom educational programs and utilizing Smart Boards. Awaiting network connectivity improvement before proceeding	2009	No End Date (Continuous)
<b>Behaviour change program</b>							
Train staff in web-conferencing	Ongoing/In Progress	80	% of staff are trained web-conferencing	Have trained most staff on using web conferencing and Smart Boards	Continue training employee on web conferencing and Smart Boards. Awaiting Ministry to upgrading internet connectivity, currently internet band width cannot support real time educational training at a large volume.	2009	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress			Continue with encouragement of virtual attendance.	Ongoing	2008	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress			Continue with encouragement for carpooling to meetings	Ongoing	2008	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	In Development				Need to assess but may not be accomplished due to geographical challenges	2011	No End Date (Continuous)
<b>Other Business Travel Actions</b>							
Review the needs for in person meetings	Ongoing/In Progress			Have reviewed and assessed the needs for holding various meeting, looking at usefulness, value and time comittments. Look at utilizing technology for these meetings.	Ongoing	2010	No End Date (Continuous)
Utilize Document Managment System	In Development				Utilize Document Managment System to allow individuals to view documents remotely rather than having to drive to a location to view these documents in person. Perhaps expanding to external auditors so they can perform audit remotely and not have auditors travel to the school district.	2011	No End Date (Continuous)
Utilize Work Flow system	In Development				Utilize Work Flow System to allow individuals to electonically route documents instead of driving and delivering documents in person. Also to reduce the need to mobilie deliver documents to various locations.	2011	No End Date (Continuous)
<b>Education, Awareness, and Engagement</b>							
<b>Staff awareness/education</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
Provide education to staff about the science of climate change	Ongoing/In Progress		Promoted climate change materials for teachers to educate staff and students	Expand climate change educational training for staff and students.	2007	No End Date (Continuous)
<b>Client/public awareness/education</b>						
Provide education to clients/public about the science of climate change	Ongoing/In Progress		Promoted climate change materials for teachers to educate staff and students	Expand climate change educational training for staff and students	2007	No End Date (Continuous)
Provide education to clients/public about the conservation of water, energy, and raw materials	In Development			Students are preparing environmentally friendly programs, recycling program, and conservation program to be implemented in the school district	2011	No End Date (Continuous)
Provide green tips on client/public website or in newsletters	In Development			To provide green tips and update stakeholders of green programs in school newsletters.	2011	2011
<b>Other Sustainability Actions</b>						
<b>Commuting to and from home</b>						
Encourage commuting by foot, bicycle, carpool or public transit	Ongoing/In Progress		Challenges given limit public transit availability in Bella Coola Valley and large geographical challenges	Ongoing review	2008	No End Date (Continuous)
<b>Other Sustainability Actions</b>						
Other Background Information for 2010	Completed in 2010		<p>During 2010, the entire Bella Coola Valley had challenges with forest fires and flooding issues. In July and August, forest fires were burning out of control in the valley.</p> <p>The BC Forest Service used the school district buildings as their control centre. The school building were also used as backup for emergency shelter. During the fire, the enter community was closed off as the only highway in and out of the valley was closed due to the forest fire.</p> <p>In late September and early October, the entire Bella Coola Valley was flooded out due to heavy rainfall. The entire community was closed off due to the highway being washed out in about a dozen areas, and no planes could land as the airport runway was under water. School buildings were flooded out. For the remiander of the 2010 Autumn, school bulding were being dried out with heaters to make them usable.</p>	Information only	2010	2010

**School District 49 Central Coast - 2010 Carbon Neutral Action Report**

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
Other Background Information	In Development		<p>School District 49 is large geographically, but in terms of enrollment is among the smallest school districts in British Columbia. It is located on the Central Coast, north of Vancouver Island. We educate about 225 pupils in five schools, of which three schools are located in the Bella Coola Valley covering all grades K-12, and two K-7 schools on the more remote outer coast at Shearwater Denny Island and Oweekeno on Rivers Inlet. There is a small fleet of vehicles and school buses operated by School District 49.</p> <p>*note* there are challenges in the Bella Coola Valley with the attempt to implementing new environmental enhancements.</p> <p>The first; there is a lack of skilled individuals to install and maintain new environmental equipment (e.g. solar panel, hybrid vehicles...), the closest community which may have these skilled individual is in Williams Lake which is a 6 hour vehicle drive or a 1.5 hour plane ride for individuals from Vancouver.</p> <p>Two; currently there is no recycling company that offers service to removing recycled products from the Bella Coola Valley. Currently bottles and paper is being collected at the regional district landfill, but no company can economically remove these from the valley. Upgrading kitchen appliances to energy star appliances is not really feasible as there</p>	Information only	2008	No End Date (Continuous)
Replacing High School Gym	Ongoing/In Progress		<p>In the Spring of 2010, the school district received approval to replace the High School aging and energy inefficient gym. The new gym is being built to today's energy efficient standards.</p>	Complete construction of gym	2010	2011