

Mission Public Schools (School District # 75)

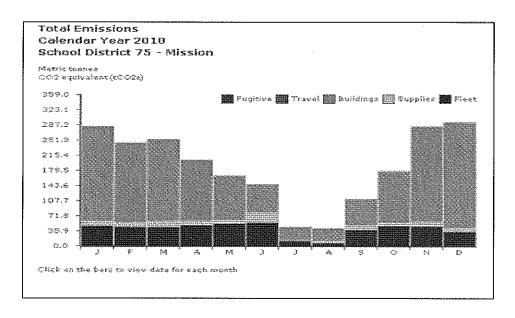
2010 Carbon Neutral Action Report

Executive Summary

The year of 2010 saw Mission Public Schools continue to assume a community leadership role in the area of environmental sustainability. Most notably the Board of Trustees officially ratified an Environmental Sustainability Policy (http://www.mpsd.ca/districtinformation/pdf/policy_23.pdf) that will serve to guide the actions of the organization and its staff. One of the major challenges that has been identified as being of the greatest significance is the need for a cultural shift in environmental awareness and sustainability practices within the organization as well as the broader community. This shift needs to occur in order for the organization to maximize the benefits of the initiatives that have been undertaken. These circumstances have led to a close working relationship with municipal governance and the focus on cultivating awareness and sustainability throughout the community with and through the students of the school district. In support of the policy, staff have started on development of the supporting administrative procedures that will specify actions of staff both from the operations and education aspects of the organization. These procedures will formally identify best practice towards reducing the organizational carbon footprint, promote sustainable behaviour and set annual reduction targets.

In addition to implementing organizational policy trustees also sanctioned creation of the Carbon Action Advisory Committee as a multi-partner body to guide and provide feedback on School District direction. The committee is comprised of motivated community, municipality, and employee group representatives who meet quarterly to review the work of district staff, review possible initiatives and generally collaborate on a community-wide basis.

Through the auspices of B.C. Hydro the School District was able to negotiate the hiring of an Energy Manager on a shared basis with the municipality. In addition the Manager of Environmental Sustainability also continued to work on the development and implementation of cultural change and sustainability initiatives. Students at the secondary level were engaged and involved through the Energy Ambassador Program to provide some district wide coordination to school based activities. These student leaders will be expected to carry the sustainability and conservation messages to local elementary schools while generally role modeling responsible actions with their peers.



2010 Greenhouse Gas Emissions

Totals Calendar Year 2010, School District 75 - Mission

Greenhouse Gases in Tonnes Scope 1 (Direct) Emissions		14			Di- 000 014			4000 · 4	
		Measure	Quantity	CO2	BioCO2	CH4	N2O	tCO2e 1	
Mobile Combus	tion (Fleet)	Litres	201,500.48	483.96	26.15	0.02	0.03	519.12	
Stationary Com	oustion, Reported	3 GigaJoules	31,135.31	1,563.77	0.00	0.03	0.03	1,573.88	
Scope 2 (Indirect) Emis	sions								
Purchased Ener	gy, Reported 3	GigaJoules	15,495.50	106.92	0.00	0.00	0.00	106.92	
Scope 3 (Business Trav	el and Office Pap	er) Emissions							
Office Paper		Packages	16,840.00	114.07	0.00	0.00	0.00	114.07	
Total E	missions, Calend	dar Year 2010		2,268.72	26.15	0.06	0.06	2,313.98	
Carbo	n Neutral or Offse	t Exempt		350.51	26.15	0.02	0.01	380.54	
Total f	or Offsets			1,918.20	0.00	0.03	0.05	1,933.44	

^{1.}Each greenhouse gas has been converted to a standard measurement (tCO2e) by multiplying its emissions by its global warming potential (GWP). The GWP of carbon dioxide (CO2) from both anthropogenic and biogenic sources is 1; methane (CH4) is 21, and nitrous oxide (N2O) is 310.

It was estimated that stationary fugitive emissions from cooling do not comprise more than 0.01% of organization X'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 the School District's total greenhouse gas emissions profile. As required by section 5 of the Carbon Neutral Government Regulation, 380.54 tonnes CO2e of

^{2.} Estimated data has been calculated based on the methods described in the Methodology Document.

^{3.} Reported data refers to consumption which has been directly billed to the organization.

emissions resulting from the operation of school buses of 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)(c) of the Carbon Neutral Government Regulation. As demonstrated by the foregoing calculations, the School District was required to purchase carbon offsets for 1,933.44 tonnes of CO2e at a rate of \$25 / tonne resulting in an expenditure of \$54, 136.32 (including HST).

Actions Taken to Reduce Greenhouse Gas Emissions in 2010

- School Board adoption of Environmental Sustainability Policy (http://www.mpsd.ca/districtinformation/pdf/policy 23.pdf)
- District school bus fleet converted to bio-diesel use
- Implementation of new power management software utility for computer work stations
- Server virtualization continued to the extent 90% of School District servers are now virtualized
- Initiated development of "Connected" which will be the School District electronic document sharing and communication tool utilizing SharePoint.
- Sent about 200 CRT monitors and an equal amount of discontinued computer towers to local recycling authority
- Delamping and relamping (T12 →T8 tubes & wattage reduction) in two schools
- Deployed Multi -Function Devices at all School District sites and eliminated approximately four tons of peripheral devices (i.e. printers, faxes, copiers)
- Actively campaigned and eliminated a variety of energy inefficient personal appliances (heaters, fridges, freezers, etc.) from a variety of sites
- Installation of twenty water sensors to manage urinal bank flushing
- Joint implementation of Brown Field Irrigation Procedure in conjunction with the municipality for summer months
- Compost recycling pilot program in four elementary schools resulting in a 70 to 90 % reduction in solid waste at each site
- Instituted garbage audits at pilot elementary schools and created environmental champion award for school with highest per capita percentage of recycling
- "Green Tips" provided to staff through electronic bulletins
- Established video conferencing and web conferencing capacity at three secondary schools
- Encouraged schools to develop and include environmental sustainability action plans within the social responsibility aspects of annual school growth plans

Plans to Continue Reducing Greenhouse Gas Emissions (2011-2013)

- Continued work with the community and the municipality on joint endeavours
- Continue to work with staff to raise awareness levels for sustainable initiatives and behaviour
- Continue relamping and delamping (wattage reduction) at additional School District facilities

- Expand solid waste reduction to all schools
- Install 20 additional water management devices on uncontrolled washrooms
- Retrofit inefficient HVAC air handling systems to high efficiency systems
- Set minimum recycle content in all paper purchasing
- Deploy room occupancy sensors on office spaces and meeting rooms
- Replace parking lot lights and exterior wall-pak lighting with LED technology
- Replace variable frequency drives on air handling units
- Replace heat circulation pumps with energy efficient motors
- Implement Administrative Procedures to direct staff behavior towards improved sustainability
- Reduction of Energy Intensity measurement based on 2010 base year
- Expansion of Energy Ambassadors Program to actively engage all students

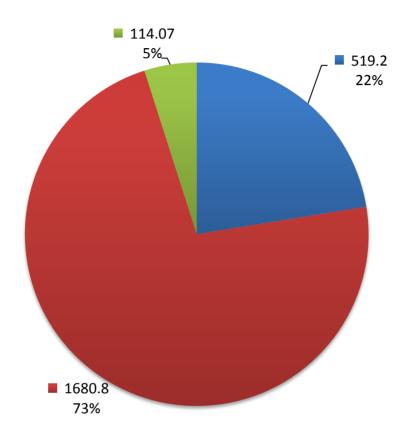
Respectfully submitted,

Carrie McVeigh

Secretary-Treasurer

School District #75 (Mission)

Greenhouse Gas Emissions by Source for the 2010 Calendar Year (tCO₂e*)



Total Emissions: 2314.07

- 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: 1933.53. Total offset investment: \$48,338.25. Emissions which do not require offsets: 380.54 **

^{*}Tonnes of carbon dioxide equivalent (tCO₂e) 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.

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			
Mobile Fuel Combustion (Fleet and other mobile equipment)										
Vehicle fuel efficiency										
Perform regular fleet maintenance to improve fuel-efficiency	Ongoing/In Progress	100	% of vehicles are subject to regular maintenance for fuel efficiency	Fleet vehicles are inspected weekly and serviced at scheduled intervals through preventative maintenance program	Nothing at this time owing to budget constraints	2008	No End Date (Continuous)			
Replace small maintenance vehicles with more fuel-efficient models	Ongoing/In Progress	0	% of small maintenance vehicles are fuel-efficient	Three (3) service vehicles retired and not replaced	Replacement vehicles as required will be based on serviceability and fuel efficiency - no replacement vehicles anticipated due to fiscal constraints	2010	2010			
Behaviour change program										
Provide fleet driver training to reduce fuel use	Ongoing/In Progress	50	% of current drivers are trained	Bus drivers are trained at the start of the school year	Training of all vehicle operators with the "Easy On, Easy Off" Program of vehicle operation (Oct. 2011)	2008	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			Signage erected at building sites, operations protocol for staff operating vehicles	Continued support and Implemenattion	2008	No End Date (Continuous)			
Encourage carpooling in fleet vehicles	In Development				Very little opportunity exists within the organization in this regard although whenever practical carpooling is organized	2008	No End Date (Continuous)			
Other Mobile Fuel Combustion Actions										
Bus fleet all converted to bio-diesel operation	Completed in 2010			The conversion was made to bio-diesel for all student transport vehicles		2009	2010			
Stationary Fuel Combustion, Electricity and Fugitive Em	nissions (Buildings))								
Planning/management										
Enrol in a building energy benchmarking program (e.g., GREEN UP)	Ongoing/In Progress			Energy Manager hired as a BC Hydro funded initiative and shared between the municipality and the School District.	Energy Manager retained and a 400, 000 kW hour reduction set as target for the School District facilities	2010	2012			
Install a real time metering system (e.g. Pulse, Reliable Controls, Houle Controls)	In Development	0	% of buildings have a real time metering system installed		Launch real time monitoring in two schools and as resources allow	2011	No End Date (Continuous)			
Owned buildings										
Establish energy performance baseline for owned buildings	Completed in 2010	100	% of owned buildings have an established energy performance baseline	Building consumption for gas, electricity, water and paper established and monitoring process implemented		2009	No End Date (Continuous)			
Complete energy retrofits on existing, owned buildings	Ongoing/In Progress	10	% of owned buildings have undergone energy retrofits since start year indicated	No progress owing to restricted budget - continued with identification and preparation of sites for retrofits when funding becomes available		2008	No End Date (Continuous)			
Retrofitting owned buildings										

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 mechanical systems (heating, cooling, ventilation) during retrofits	Ongoing/In Progress	% of retrofits since start year indicated had heating, cooling, and ventilation systems upgrades	School Board Office - new high efficiency boiler (2008) Christine Morrison Elem - new high efficiency boiler (2009)	Contingent on funding - Hatzic Secondary - replace boiler system Hillside Elementary - replace boiler system	2008	No End Date (Continuous)
Upgrade lighting systems during retrofits	Ongoing/In Progress	% of retrofits since start year indicated had lighting systems upgrades	Relamping (T12 to T8) lights at two schools	Continued relamping/wattage reduction of schools Room occupancy sensors installations at selected locations Magnetic ballast replacement - one location Replace parking lot lighting with LED - one site Replace Wall-Pak lighting with LED technology - two sites	2010	2013
Upgrade/adjust control systems during retrofits	Ongoing/In Progress	% of retrofits since start year indicated had control system upgrades or adjustments	No projects undertaken due to budget restrictions	Contingent on funding - Hatzic Secondary - retrofit air handling controls Install Variable Speed Drives - 5 locations	2008	No End Date (Continuous)
IT power management						
Install power management software which shuts down computers outside of regular business hours	Completed in 2010	% of computers shut down automatically outside of regular business hours	Night Watchman software deployed to all fixed work station	None	2010	2010
Implement server virtualization	Ongoing/In Progress	% of servers have been 90 virtualized since start year indicated	Ongoing virtualization of servers and software as required	Continued virtualization of servers	2009	No End Date (Continuous)
Apply auto-sleep settings on computer monitors and CPUs	Ongoing/In Progress	% of computers have auto-sleep settings applied	Power management software affords this function	None	2010	No End Date (Continuous)
Remove stand-alone printers, copiers, and/or fax machines and install multi-function devices	Completed in 2010	% reduction in printers, copiers, and/or fax machines since start year indicated	Multi Function Devices deployed to all occupied School District buildings	Ongoing removal of stand alone devices	2010	2012
Apply auto-sleep settings on printers, copiers, fax machines, and/or multi-function devices	Completed in 2010	% of devices have auto-sleep settings applied	All MFD's have sleep settings	None	2010	No End Date (Continuous)
Replace computers with ENERGY STAR models during regular computer upgrades	Ongoing/In Progress	% of computers are ENERGY STAR rated	Administrative Procedure requiring replacement appliances to be Energy Star rated adopted.	Replacement of 300 work stations with Energy Star rated machines	2010	No End Date (Continuous)
Appliances and electronic devices						
Replace refrigerators with ENERGY STAR models or source ENERGY STAR models for future purchases	Ongoing/In Progress	% of fridges are ENERGY STAR rated	Decommissioned 10 refrigerators	Administrative Procedure requiring replacement appliances to be in the top 30% of Energy Star rated appliances adopted.	2010	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		Personal appliance policy introduced	Implementation of policy thereby reducing/eliminating personal appliances	2010	No End Date (Continuous)
Behaviour change program						
Ask staff to unplug electrical equipment or switch off power bars when not in use	Ongoing/In Progress		Administrative tours of facilities to monitor appliance management	Continue active monitoring and providing direction	2008	No End Date (Continuous)
Ask staff to close blinds at end of work day to reduce heating/cooling demands	In Development			Combined with natural lighting procedures and relamping staff will be asked to close blinds and shutters.	2011	No End Date (Continuous)
Provide tips to staff on saving energy in the office while working outside of regular business hours	Ongoing/In Progress		Weekly Green Tips electronically circulated to all staff in the School District	Continuously providing information and consciously working to change the cultural behaviour of staff and students	2008	No End Date (Continuous)

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 reminders for turning off lights (e.g., signs, stickers, messages)	Ongoing/In Progress		Stickers posted by light switches in a number of School District facilities	Continued deployment of signage	2008	No End Date (Continuous)
Supplies (Paper)						
Paper Type						
Purchase 30% post-consumer recycled paper	In Development	% of total paper purchased contains 30% recycled content	Established purchasing policy	50 % of paper consumption will have 30% recycled content	2011	No End Date (Continuous)
Printer/document settings						
Switch networked printers and photocopiers to automatic double-sided	Ongoing/In Progress	% of network printers or photocopiers are set to automatic double-sided	Multi Function Devices default to duplex mode	Continued support to facilitate duplexing and removal of stand alone printers where ever possible	2010	No End Date (Continuous)
Apply "print and hold" settings to networked printers to eliminate unclaimed print jobs	Ongoing/In Progress	% of network printers have 'print and hold' settings applied	Sites provided with the option during roll out of Multi Function Devices	Continued conversion of machines as required	2010	2012
Electronic media in place of paper						
Install collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	% of staff workstations with software installed	SharePoint environment constructed	Roll out of SharePoint collaboration tool	2010	2011
Use electronic document library for filing common documents	Ongoing/In Progress		Associated with SharePoint	Ongoing development and implementation	2010	No End Date (Continuous)
Post materials online that were previously printed	Ongoing/In Progress		Associated with SharePoint	Ongoing development and implementation	2010	No End Date (Continuous)
Switch to an electronic payroll notification system in place of paper pay stubs	Ongoing/In Progress	% of staff currently receiving notification electronically	Majority of staff switched to electronic notification	Provide workstation access to convert balance of staff to electronic notification	2010	2011
Behaviour change program						
Train staff to use collaborative software for electronic editing (e.g. SharePoint, Groove, etc.)	Ongoing/In Progress	% of staff currently have received collaborative software training	Development, customization and testing of SharePoint environment	Deployment to all sites as standard of operation and site training by inhouse staff	2010	2011
Encourage re-use of scrap paper	Ongoing/In Progress		Systemic awareness	Systemic awareness	2008	No End Date (Continuous)

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
Business Travel							
Virtual meeting technology							
Install web-conferencing software (e.g., Live Meeting, Elluminate, etc.)	Ongoing/In Progress	1	% of computers have web- conferencing software installed	Bridge-It software licensing deployed for limited applications	Ongoing review to determine applicability	2010	No End Date (Continuous)
Install video-conferencing units in meeting rooms or provide mobile video-conferencing units	Ongoing/In Progress	1	% of meeting rooms have access to video-conferencing equipment	Video conferencing rooms installed at three district secondary schools	None at this time	2010	No End Date (Continuous)
Behaviour change program							
Train staff in web-conferencing	Ongoing/In Progress	1	% of staff are trained web- conferencing	I.T. staff and select instructional staff trained	Training as required to be provided	2010	No End Date (Continuous)
Train staff in video-conferencing or provide technical support for video-conferencing set-up	Ongoing/In Progress	1	% of staff are trained in video- conferencing or have access to technical support	Video conferencing implemented	Continued expansion and use of video conferencing utilization	2010	No End Date (Continuous)
Encourage staff to consider virtual attendance/presentation at events where possible	Ongoing/In Progress			Limited applicability	Ongoing promotion	2008	No End Date (Continuous)
Encourage carpooling to meetings	Ongoing/In Progress			Environmental resposibility promotion of carpooling	Ongoing promotion	2008	No End Date (Continuous)
Encourage alternative travel to meetings (e.g., bicycles, public transit, walking)	Ongoing/In Progress			Environmental resposibility promotion of resposible actions	Ongoing promotion	2008	No End Date (Continuous)
Education, Awareness, and Engagement							
Team-building							
Create Green, Sustainability, Energy Conservation, or Climate Action Teams with executive endorsement	Ongoing/In Progress			Climate Action Advisory Committee multi-partner group established by School District	Continued meeting, oversite and advisement of environmental sustainability actions	2010	No End Date (Continuous)
Provide resources and/or dedicated staff to support teams	Ongoing/In Progress			Energy Manager & Environmental Sustainability Manager positions instituted	Ongoing development of initiatives and monitoring of implemented changes - Cultural change and support	2010	2012
Providing behaviour change education/training to teams (e.g., community-based social marketing)	Ongoing/In Progress			Site based training on a variety of initiatives provided to staff and students	Continued implementation of initiatives across all district schools	2010	No End Date (Continuous)
Awards/Recognition							
Establish a sustainability/green awards or recognition program	Ongoing/In Progress			Pilot schools four bin recycling program awards to recognize behavioural effectiveness implemented	Four bin recycling recycling expansion to all elementary schools	2010	No End Date (Continuous)
Staff Professional Development							
Support green professional development (e.g., workshops, conferences, training)	In Development				Profile "Green Opportunities" at District Professional Development days	2011	No End Date (Continuous)

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
Staff awareness/education						
Provide education to staff about the science of climate change	Ongoing/In Progress		Staff presentations incorporate climate change data	Continuing to raise awareness level and facilitate change	2009	No End Date (Continuous)
Provide education to staff about the conservation of water, energy, and raw materials	Ongoing/In Progress		Policy and baseline data identified for water consumption and recycling efficiency identified	Continuing to raise awareness level and facilitate change	2010	No End Date (Continuous)
Provide green tips on staff website or in newsletters	Ongoing/In Progress		"Green Tips" electronically circulated to all staff	Ongoing	2010	No End Date (Continuous)
Client/public awareness/education						
Provide education to clients/public about the science of climate change	Ongoing/In Progress		Schools reporting out to public on sustauinability efforts and rationale / Public awareness through media coverage	Ongoing	2009	No End Date (Continuous)
Provide education to clients/public about the conservation of water, energy, and raw materials	Ongoing/In Progress		Climate Action Advisory Committee (Cross Community/multi- jurisdictional) communication	Ongoing coordination of sustainability initiatives and affiliated communication	2010	No End Date (Continuous)
Other Education, Awareness, and Engagement Actions						
Adoption of Environmental Sustainability Policy to officially sanction work of staff for all aspects of "greening".	Completed in 2010		Board of Trustees for the School District officially ratified Environmetal Sustainability Policy		2009	2010
Development of administrative procedures to guide staff actions (e.g. Purchasing Procedures, System Reduction Targets Procedure, Brown Field Procedure, Personal Appliance Procedure)	In Development		Development	Solicit system feedback for procedures and implementation for 2011-12 school year	2011	2011
Other Sustainability Actions						
Water conservation						
Establish a water conservation strategy which includes a plan or policy for replacing water fixtures with efficient models	Ongoing/In Progress		Administrative procedure and plan developed	Continued implementation of plan	2010	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		20 Water Matrix monitors installed to manage constant water flow on urinals - Brown Field Administrative Procedure for irrigation developed and implemented in conjunction with the municipality	Continued use of practice	2010	No End Date (Continuous)
Waste reduction/diversion						
Put in place an operations policy to facilitate the reduction and diversion of building occupant waste from landfills or incineration facilities	Ongoing/In Progress		Four Bin Recycling Program introduced at four elementary schools	Expansion of program to 6 more elementary schools	2009	2013
Implement a hazardous waste reduction and disposal strategy	Ongoing/In Progress		All Hazardous waste disposed of through Abbotsford/Mission Recycling facilities or certified agency (Four tonnes of deleted electronics)	Continued practice	2009	No End Date (Continuous)
Procurement (non-paper supplies)						
Incorporate minimum recycled content standards into procurement policy for consumable, non-paper supplies (e.g., writing instruments, binders, toner cartridges, etc.)	Ongoing/In Progress		Purchasing Administrative Procedure developed and identifies acceptable thresholds for major purchases	Full system implementation of procedure	2010	No End Date (Continuous)
Implement sustainable purchasing program for cleaning products, disposable paper products and trash bags	Ongoing/In Progress		Bio-degradable cleaning supplies purchased where ever possible	Continued practice	2008	No End Date (Continuous)

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
Building construction, renovation, and leasing						
Establish a policy to reuse materials where possible and divert construction and demolition debris from landfills and incineration facilities	Ongoing/In Progress		Routine recycling and repurposing of construction materials by maintenance staff	Ongoing	2008	No End Date (Continuous)
Indoor air quality						
Enforce a scent-free policy (e.g., no strong perfumes, deodorants, etc.)	Ongoing/In Progress		Some buildings have adopted this practice on an optional basis	None	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		The Purchasing Administrative Procedure incorporates these parameters where environmentally sustainable alternatives exist. Operating/Replacement procedures also dictate minimizing environmental impact (e.g. low VOC for paint purchases)	Full system implementation of purchasing procedure and full definition and articulation of Operating/Replacement Procedure	2009	No End Date (Continuous)