



# Lifestyle Audits

**Guide**





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## School Lifestyle Audits

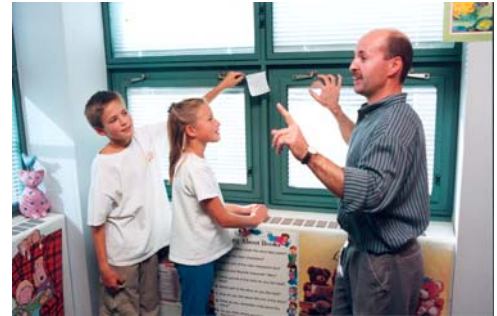
### *Introduction*

School lifestyle audits are an important first step in the conservation of energy and water resources, and the management of waste in your school.

During the lifestyle audits the students examine how the school facility uses energy, consumes water and generates waste. The school lifestyle audits create an awareness of efficient technologies and allow students to measure the efficiency of their school. As technical changes are made to the school, the students can monitor the increased efficiency through this process of conducting a School Rating.

Lifestyle audits should be done once a year to help showcase successes and areas for improved practices. There are 11 lifestyle audits to complete and these are grouped into three categories: energy, water and waste.

This module introduces you to the energy, water and waste lifestyle audits, the steps to completing these, and information on calculating your school's rating.



*See Appendix B of this document for a list of items required for proceeding with the lifestyle audits.*

### Energy Audit

Your students will audit the facilities in their school that use different types of energy: electricity, natural gas and transportation fuels. There are six energy audits, each focusing on a different energy use in your school:

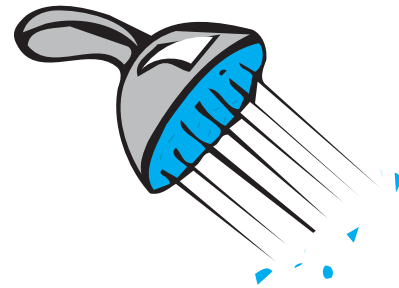
1. Heating, Ventilation and Air Conditioning
2. Draft-Proofing
3. Domestic Hot Water System
4. Lighting
5. Transportation and Winter Parking
6. Office Equipment and Appliances



### Water Audit

Students will also audit the different appliances in the school that use water: sinks, showers, toilets, urinals and dishwashers. There are three water audits, each focusing on different areas where water is used in the school:

7. Sinks
8. Restrooms
9. Outside use



### Waste Audit

The status of current recycling programs and how hazardous products are handled in the school make up the waste audits your students will perform. There are two waste audits:

10. Recycling programs
11. Hazardous wastes



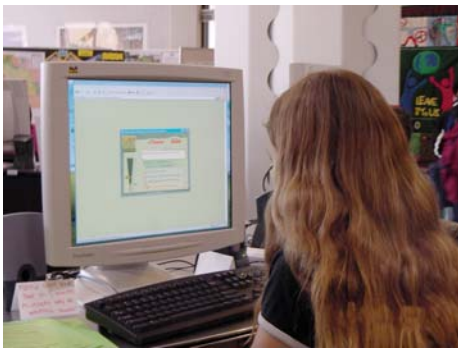
Italicized words are defined in the glossary in Appendix A.

## *Ten Action Steps to Supporting Student Lifestyle audits*

The following are 10 activities to perform in supporting and preparing your student conservation team for the completion of the lifestyle audits. A checklist is included in this package to aid you in applying these steps to your program.

**One: Discuss the issues...** discuss with your Conservation Team some of the issues related to energy use, water consumption and waste production. Discuss the importance of efficiently using natural resources.

**Access** online resources to support your audit discussions on your school program's web site.



**Two: Prepare staff and teachers...** notify your school staff, administrators and custodian(s) of the dates and times when the audits will take place. Ask for the cooperation of all staff members, as many of them will be asked to provide information about their class or work area.

**Three: Prepare materials...** make one copy of each lifestyle audit. Be sure to photocopy on both sides, as the students will be quick to comment if you forget!

**Access** the glossaries to help in defining terms students may be unfamiliar with. Glossaries are provided within this manual.

**Four: Prepare students...** get students familiar by reviewing the audit process with the students. Also, if there are some lead students, invite them to explain how to do audits to the other students.

**Five: Proceed with the audits...** once you have discussed the issues with your students and prepared everyone, proceed with the audits by dividing the students into teams of two or three and assign an audit to each group – then let them go to work!

All audits can be completed within one hour, however because there are a total of 11 audits – some groups may need to do more than one audit.

**Use** the “Calculating your School Rating worksheet provided with this package or enter their results on the program website.

**Six: Compile scores...** when all assigned audits are completed, ask each audit group to compile the total score manually.

**Seven: Share findings...** have each audit group present its findings to the rest of the Conservation Team.

**Gather** in a school assembly, as individual classes, with parents advisory group and/or with community groups.



**Eight: Report the findings...** send a copy of the audits and the calculated school ratings to the your district facilities representative.

**Nine: Present findings...** organize a time for the Conservation Team to make a presentation of the School Rating to the school.

Celebration ideas might include: a picnic with awards for involvement, or a pizza party for your students.

**Ten: Commend your Conservation Team...** recognize their efforts.

## ***School Ratings***

The School Rating is designed to give the students, staff and district an idea of the efficiency of their schools. Once the students have completed their lifestyle audits, the next step is for the leader to help the students create your school's rating.

### **When to do a School Rating**

Each year your school will chart the technical changes made in any one year.

Tallying the score from each of the audits and then combining these scores to create a total for each of the audit categories (energy, water, waste) will accomplish this. This will produce your School Rating.

The Year One rating, which is often done before any technical changes are made, will indicate your school's current performance. The Year Two and Year Three and subsequent ratings, which are usually done near the beginning of each year of the program, will show any improvements that have been made to your school facilities over the previous year. If desired, the Conservation Team can also do the student lifestyle audits at the end of Year Three, to measure technical changes made in that year.

<b>Energy Scores</b>		
<b>Energy Audit</b>	<b>Number of Points Available</b>	<b>Your Score</b>
1. Heating, Ventilation and Air Conditioning	<b>17</b>	
2. Draft-Proofing	<b>6</b>	
3. Domestic Hot Water System	<b>9</b>	
4. Lighting	<b>11</b>	
5. Transportation and Winter Parking	<b>9</b>	
6. Office Equipment and Appliances	<b>5</b>	
<b>Total</b>	<b>57</b>	

## *Calculating the School Rating*

The School Rating may be completed manually or using the programming on the website.

### **Using the website**

To ease the process of calculating ratings, the program website contains a student audit program that lets students enter the results of their audits (number of leaking taps, changes in lighting, recycling programs, etc). The program then automatically tallies the scores for each audit and calculates the School Rating. The program saves all data entered, so students can add information as they complete the audits.

### **Manually**

You may wish to assign the manual School Rating calculations to the students as a calculation exercise. While older students will be able to do the calculations to create the ratings for the energy audits, younger students will need help from a teacher. Some of the ratings require calculations of proportions that may not have been covered in the mathematics curriculum for younger students.

Use the step-by-step instructions on in the *School Rating Calculation Worksheet* provided with this package to manually calculate your school's rating.

### **Transfer Ratings to the Display Sheet**

Once the ratings have been calculated, transfer the information to the display sheet provided in the School Rating Calculation Worksheet. The graphs on the display are identical to the graphs in your school calculation worksheet.

## Energy Audit 1

### Heating, Ventilating and Air Conditioning

Most of the energy your school consumes is used for heating the buildings. The furnace is one of the biggest users of energy in your school. Furnaces use a heat source (natural gas, oil or electricity) to heat air or water. The heated air or water is then pumped to every room in the school. In most rooms, a thermostat controls the room's temperature.

In the summertime, *air conditioning* is sometimes needed to cool the school. In some places, schools only need air conditioning for a few days or weeks every year. In other places, however, the air conditioning is used so much that cooling the school uses as much energy as heating the school!

There are many things that can be done to improve the efficiency of the heating and cooling systems.



## Energy Audit 2



### Draft-Proofing

Once your school's furnace produces heat to warm the inside of the school, cold air entering the buildings through open doors and cracks forces the warm air outside. Most heat escapes through open doors and through cracks around doors and windows. By repairing old or damaged *weather-stripping* and replacing *caulking*, the school's heating bill can be greatly reduced.

For this audit, every member of your group will need a *draft detector*. One way to make a draft detector is to glue a feather onto the end of a toothpick and put the other end into a piece of plasticine. Another way is to tape a piece of toilet tissue or facial tissue to a pencil, so 4 inches (10 cm) of tissue hangs off the pencil. By holding the draft detector beside doors and windows you can see if drafts are entering the school. When using your draft detector, be careful not to be misled by drafts from nearby heating vents or air currents caused by students moving.

### *Energy Audit 3*

#### **Domestic Hot Water System**

Domestic hot water is used to wash hands and dishes, clean the school and for showers. It does not include water used to heat the buildings.

Heating water for your school uses a lot of energy. Water is heated in a large water heater. It then travels through water pipes to all the sinks in the school. The heat is constantly trying to escape from the water. If the hot water pipes are insulated, the heat will be trapped in the water much longer. By improving the efficiency of the domestic hot water system, energy bills can be greatly reduced.



### *Energy Audit 4*

#### **Lighting**

Lighting uses more electricity than anything else in your school. Using inefficient lights, or having too many lights installed, wastes electricity. It is often most cost effective to install more *energy efficient lights*.

### *Energy Audit 5*

#### **Transportation and Winter Parking**

Cars, trucks and buses used to transport students and staff to and from your school can use a lot of energy. Not only do they use energy for fuel, but in regions with very cold winter days they may also use electricity in the winter for their *block heaters*. On cold winter days, the block heaters in many cars will be plugged in to keep the engines warm. Using block heaters wisely can save a lot of electricity.



### *Energy Audit 6*

#### **Office Equipment and Appliances**

Office equipment and appliances can use a tremendous amount of energy. Equipment and appliances such as computers, photocopiers, refrigerators and coffee machines should also be audited to determine if they are in good repair and are being used efficiently.

### *Water Audit 1*

#### **Sinks**

Sinks are found in many areas of the school, including restrooms, food preparation areas, science laboratories and art classrooms.



### *Water Audit 2*

#### **Restrooms**

Restrooms use more water than anything else in your school. Toilets, urinals and showers are important parts of every school, but they can also waste lots of water. One leaking toilet will cause the school's water bill to increase greatly. There are many things that can be done to reduce water use in restrooms.

### *Water Audit 3*

#### **Outside Water Use**

To many of us, having a green lawn is very important. However, watering lawns improperly can also waste lots of water. Reducing lawn watering can reduce the school's water consumption.



## Waste Audit 1

### Recycling Programs

Many towns and cities have started recycling campaigns for pop cans, paper, glass, metal, plastic and other waste items. Your school may already be recycling these materials. However, that does not mean the students and staff are recycling everything they should. Recycling programs assist your school in reducing the amount of waste produced.



## Waste Audit 2

### Hazardous Waste

In order to keep your school clean and school equipment working properly, custodians use a large number of products. Many of these products are hazardous and could harm people or the natural environment if they are not used or disposed of properly. Your audit group will learn about some of the products your custodian(s) use(s). At the end of the audit you may be able to help the custodian choose less hazardous products for use in your school.



Hazardous products can also be found in other areas of the school. For example, empty toner cartridges from laser printers are hazardous. As well, science labs may generate many different types of hazardous waste. All hazardous waste should be carefully stored and disposed of properly. Ideally, schools should reduce the amount of hazardous waste they produce.

***Next Step?*** Proceed with preparing to complete your school's lifestyle audits!

## Appendix A: Glossary

### A

#### **Aerators**

These water-saving devices reduce the flow of water through a faucet by adding air. A low-flow faucet aerator can reduce the flow of water from your tap by 25 percent without being noticeable to you.

#### **Air Conditioning System**

An air conditioning system is used to cool air in the school. A building gets hot when:

- the sun heats the building
- equipment and people heat the inside of the building
- hot air enters the building through open doors, open windows, leaks and cracks.
- air conditioning systems can be made more efficient by:
  - using automatic timers to turn it off when the building is unoccupied
  - setting the temperature above 79 °F (26 °C)
  - keeping windows and doors closed
  - ensuring doors are not left open for long periods of time
  - closing blinds on south and west windows

#### **Air-Tight**

Air-tight means that no air can penetrate an item. For example, an air-tight door means that no air penetrates between the door and the door frame. Weather-stripping is used on doors and windows to prevent air leakage.

#### **Automatic Defrost Refrigerator and Freezer**

These refrigerators and freezers use electricity to thaw ice before it builds up inside. Ice buildup reduces the efficiency of the appliances. Automatic defrost models use more electricity to keep them ice-free. They are less efficient than frequently defrosted manual models.

#### **Automatic-Flush Urinals**

Automatic timers can be used to flush urinals at pre-set times. This reduces the amount of water used. Timers can be set so that urinals do not flush during the night, on weekends or during holidays.

#### **Automatic Setback Thermostat**

This type of thermostat can be programmed to automatically change the temperature setting at certain times, such as the beginning and end of the school day. For example, during the heating season it can raise the temperature to 70 °F (20 °C) at 7:30 a.m. and lower it to 60 °F (15 °C) at 4:30 p.m. When cooling it can adjust the temperature from 75 °F (24 °C) during the day to 85 °F (30 °C) at night. This saves energy because the furnace or air-conditioning system is not used as much when the building is unoccupied. The advantage of automatic thermostats is that no one has to remember to adjust the temperature settings every day.

### **Automatic Thermostat Switch**

These switches are connected to thermostats and allow power to flow only when the temperature reaches a set point. When attached to outside plug-ins, for example, they will only send power to the plug-in when the temperature drops below the set point. This way, cars that are plugged in will only get power when it is cold enough to affect engine start up.

### **Automatic Timers**

Automatic timers can be used to start and stop electrical devices or irrigation systems at pre-set times. They are especially useful with vehicle block heaters or lights. For example, instead of manually turning block heaters on in the evening and leaving them on all night, timers can be set to turn the block heaters on in the middle of the night for only the time required.

## **B**

### **Bicycle Racks**

Bicycle racks come in many different shapes and sizes. More people will ride bikes if there are enough bicycle racks to accommodate all the bikes and if they are easy to lock bikes to. If theft is a concern, having a locked, fenced enclosure around the bicycle racks makes it safer to bring bikes to school. A locked enclosure could be kept open when people arrive in the morning, locked until lunch time, left open during the lunch hour and then locked until school ends for the day.

### **Block Heaters**

In areas with very cold winters, block heaters are used to keep the temperature of a vehicle's engine block sufficiently warm to allow the vehicle to start easily on cold winter days. Engines do not require heating when the outdoor temperature is above 19 °F (7 °C). Below 19 °F, engine heaters only need to be on three hours before the vehicle is used.

### **Boxboard**

This type of dense paper is made of cellulose wood fiber and is used in making packaging boxes (e.g. cereal boxes). It is usually made of a single layer, unlike cardboard, which is multi-layered.

## **C**

### **Caulking**

Caulking is a putty-like substance that is squeezed into cracks to seal them. It is used to prevent heat loss from a building by plugging cracks around window and door frames. Caulking can only be used to plug cracks on non-moving parts.

### **Chlorofluorocarbons (CFCs)**

CFCs are human-made chemicals consisting of chlorine, fluorine and carbon. They are used as a coolant in refrigerators and air conditioners. When released into the atmosphere, they act as a greenhouse gas and contribute to the thinning of the ozone layer. Alternatives to these harmful chemicals are available.

### **Computer-Controlled Thermostat System**

A computer-controlled thermostat system is similar to an automatic setback thermostat. Several schools are hooked up to a computer-controlled system which is operated out of the district maintenance center. The advantage of a computer-controlled system is that it can be adjusted to the specific requirements of each school without having to continually reprogram timers.

### **Coniferous Trees**

Coniferous trees are cone-bearing, with needle-shaped leaves (e.g. pine, spruce, fir or juniper). They keep their needles all year, so they provide good winter protection from winds. Planting coniferous trees on the north and west sides of a building will reduce heat loss on cold and windy winter days.

## **D**

### **Deciduous Trees**

These types of trees are broad-leafed and usually lose their leaves in the fall. Ash, elm, poplar and maple are some examples of deciduous trees. Deciduous trees planted on the south and west sides of the school can save energy by shading buildings in the summer, reducing air conditioning costs. In the winter when the leaves have fallen, sunlight can enter through windows, helping to warm and light the building.

### **De-lamped**

De-lamping is the process of removing light bulbs or tubes from lighting fixtures in places where less artificial light is needed; for example, removing light tubes from fixtures near windows or removing tubes in hallways where less light is required.

### **Dot matrix printer**

This type of computer printer has a printer ribbon and prints each letter using dots of ink. Dot-matrix printers usually use tractor-fed paper which has a series of holes along each side and comes in long, folded sheets that you tear apart after printing. This type of printer is more energy efficient than a laser printer.

### **Drafts**

Drafts entering buildings through cracks around windows and door frames can create a lot of heat loss. Heated air escapes through these cracks and cold air enters the building. This adds to the heating costs of the building and increased use of natural resources.

### **Draft detector**

Draft detectors can be used for checking drafts around windows, doors and electrical outlets. One way to make a draft detector is to glue a feather onto the end of a toothpick and place the other end into a piece of plasticine. Another method is to tape a piece of toilet or facial tissue to a pencil, so about 4 inches (10 cm) of tissue hangs from the pencil. By holding the draft detector beside doors and windows, you can see if drafts are entering the school.

### **Dripping taps**

If a tap is turned off tightly it should not drip. If it continues to drip, it means that the washers in the faucets are worn out and need replacing. A dripping tap can create a lot of wasted water and increase utility bills. If the hot water tap is dripping, this also means energy used for heating the water is being wasted.

## **E**

### **Electrical outlet**

Electrical outlets or switches on outside walls can allow heat to escape outside and cold air to enter the building. Insulation covers can be purchased to place under the plastic outlet or switch cover. Electric switch insulators look like the plastic electric switch cover and are made from a soft foam material.

### **Electricity**

Electricity is the flow of electrons. Electricity is produced from huge generators, often long distances away, and transmitted to homes through power lines. Electricity is used for many things in our daily lives: lighting, fridges, freezers, stoves, washers, dryers, dishwashers, toasters, microwave ovens, hair dryers, computers, photocopiers, televisions and stereos. In some homes and schools, electricity is also used for heating.

Electricity is produced in many ways. Non-renewable fossil fuels such as coal, oil or natural gas can be used to heat water to create steam; while nuclear power stations use nuclear reactions to heat the water to steam. The steam is used to turn turbines which turn the generators to produce electricity. Wind power stations use the force of the wind to turn turbines, while hydroelectric generating stations use the force of water flowing through dams.

### **Energy efficiency**

Energy efficiency means the degree to which the energy used by an appliance or machine is applied directly to its purpose. For example, an incandescent light bulb is energy inefficient because 90 percent of the energy it uses produces heat and only 10 percent produces light. Energy-efficient refrigerators consume less energy than others by using better insulating materials and cooling processes.

### **Energy-efficient lights**

- *Compact fluorescent lamps*  
These lamps produce the same amount of light as an incandescent bulb, but use about 75 percent less electricity. They cost more to buy than incandescents, but because they use much less energy, the cost over the lifetime of the bulb is much lower. A good rule is to use a compact fluorescent bulb to replace any incandescent that is on for more than three hours per day.
- *Fluorescent tubes*  
Inside a fluorescent tube, electricity passes through a gas to produce ultraviolet radiation. The radiation hits a special coating on the inside of the tube that then gives off light. Because they do not waste a lot of electricity by producing heat, fluorescent lights use

an average of 75 percent less electricity than incandescent bulbs to produce the same amount of light.

- *Standard fluorescent tubes*  
Standard fluorescent tubes, called T12 tubes, use 40 watts of electricity. Newer, more energy-saving tubes use 34 watts of electricity instead of 40 watts.
- *T8 fluorescent tubes*  
The most efficient fluorescents are the new T8 tubes. These use less energy than standard fluorescent tubes, plus they provide more light, have no noticeable flickering, do not hum and produce a better quality of color.
- *High-pressure sodium*  
These energy-efficient bulbs give off a golden-white light. They are usually used for outdoor lighting and in warehouses or storage rooms. They require from one to 15 minutes to reach full light output.
- *Low-pressure sodium*  
This is the most energy-efficient type of lighting available. Low-pressure sodium lights last a long time and give off a muddy yellow light. They are used in places where the color of items is not important and are usually seen along highways. They require from one to 15 minutes to reach full light output.
- *Mercury vapor*  
These lamps are similar to fluorescent lamps except that they use mercury vapor to produce light. They produce a very intense light even though they use little energy. They must be disposed of properly because they contain mercury which is a toxic material. They are often used in warehouses and other high-ceiling locations like sport facilities. They require from one to 15 minutes to reach full light output.
- *Metal halide*  
These produce a warmer light than mercury vapor and are the most efficient type of lighting for producing white light. They are usually found in high ceiling areas like sporting facilities. They require from one to 15 minutes to reach full light output.

## **F**

### **Fine paper**

Single-sheet paper that is used in photocopiers, laser printers and ink-jet printers. The paper is of a high bond (at least 20 pound bond) and comes in different colors and sizes. It is usually purchased in packages of 500 sheets.

### **Flushometer**

This is a type of toilet with a metal rod for hand flushing and no water tank. These toilets can be set to use less water than a tank style. An ultralow flow model is the most efficient type.

## **H**

### **Halon**

Halons are similar to chlorofluorocarbons (CFCs) and are used in fire extinguishers. Halons are very effective in putting out fires. When

released, halons move upward through the atmosphere and eventually break down. As they break down they release chlorine atoms, which destroy ozone molecules, contributing to the thinning of the ozone layer.

#### **Hard-water scale**

Scale is a deposit of calcium carbonate that forms when hard water is heated. The dissolved minerals in the hard water are removed and stay behind as a white, flaky deposit called scale. Scale can build up in water heating systems, kettles and other heating devices, reducing their efficiency.

#### **Hazardous waste**

Hazardous waste is potentially harmful to living organisms because it is corrosive, flammable, reactive or toxic. It should be disposed of at special hazardous waste depots or facilities and should never be put in the regular garbage. Nontoxic alternatives are available in place of many hazardous products.

#### **Heating coils**

Refrigerators have heating coils located on the back of the appliance. Sometimes heating coils are enclosed. If heating coils are not enclosed, they should be regularly cleaned to remove dust build-up. Vacuuming the coils is the easiest way to clean them.

#### **Hot water pipes (insulated)**

Hot water pipes can be wrapped with a special insulating material that prevents or reduces the loss of heat as the hot water travels through the building. Insulated pipes reduce the amount of time it takes for hot water to reach the taps.

#### **Hot water pump**

A hot water pump assists in pumping hot water over long distances in large buildings like schools. This decreases the amount of water that is run waiting for hot water to come out of the faucet.

## **I**

#### **Inflated tires**

Properly inflated tires decrease tire wear and increase the fuel efficiency of the vehicle. Reducing tire wear decreases the number of tires entering the waste stream.

#### **Insulation**

Insulation reduces the amount of heat loss in a building. Different types of materials have different insulating values (referred to as R values). Typical insulating materials are pink fiberglass, cellulose fiber (recycled newspaper) and polystyrene. Increasing the thickness of the insulation increases the R value. Increasing the thickness of insulation also increases the building cost, as thicker walls must be built to include more insulation. Drapes and blinds can be used to insulate windows to prevent heat loss especially at night. Insulated exterior doors can also be purchased to reduce heat loss.

## **L**

### **Laser printer**

This type of computer printer uses a toner cartridge to produce high-quality printed copies using heat to “burn” the printed words onto the paper. They use much more energy than a dot matrix printer. This is the kind of printer usually found in the school office.

### **Leaking Toilets**

Leaking toilets waste a lot of water. Sometimes it is hard to detect leaking toilets. One of the best ways to determine if toilets are leaky is by placing food coloring in the toilet tank. If the water in the toilet bowl changes color, then you will know that the toilet is leaking water. Regularly checking your school’s water bill can provide indications of large leaks.

### **Low-flow shower head**

A low-flow shower head reduces the area of water flow in the shower head and focuses the spray pattern. This increases the velocity of the water out of the shower head so that the reduced flow of water per minute is not noticeable.

## **M**

### **Motion Activated Taps**

Motion activated sensor taps are used to automatically control water flow. A faucet using this technology will only run water when motion is sensed within the sink.

## **N**

### **Natural gas**

Natural gas is a fossil fuel composed almost entirely of methane, but also including small amounts of other gases including ethane, propane and butane. Natural gas is used in furnaces and boilers to heat homes and buildings. Burning natural gas produces fewer emissions than burning coal, gasoline or diesel. Carbon dioxide and water vapor are released. These are both greenhouse gases. Nitrogen oxides and a small amount of sulfur dioxide are also released. These gases contribute to acidic deposition. The use of natural gas is increasing in North America.

## **O**

### **Occupancy sensors**

Occupancy sensors are used to automatically control lights. They turn lights on when a person enters a room, and turn the lights off shortly after the room is unoccupied. Occupancy sensors use heat, high frequency sensors or a combination of both to determine if anyone is in a room. Occupancy sensors are best suited for use in areas that are not occupied for long periods of time (e.g. restrooms, stairwells, corridors).

### **Oil**

In some areas, oil is used in furnaces to heat homes and buildings. Oil is also refined into many different products including gasoline, diesel, motor oil, kerosene, lubricants and wax. When oil is burned, carbon dioxide is

released into the atmosphere. A large amount of the human-made carbon dioxide emissions results from the use of transportation fuels such as gasoline and diesel. Combustion of transportation fuels also releases nitrogen oxides and sulfur oxides, which contribute to acidic deposition.

#### **Oil-based paints**

Oil-based paints are more hazardous than water-based latex paints because they emit harmful solvents while they dry. Oil-based paints require paint thinners for cleaning brushes. Paint thinners are also a hazardous product.

## **P**

#### **Photocell control**

A photocell control measures the level of natural daylight present at any particular time. It automatically switches the lights off and on according to the preset light level. When daylight provides sufficient light, the lights switch off. At sunset or during extremely cloudy periods, the lights switch on.

#### **Pilot light**

A pilot light is a small flame in a gas furnace or water heater that burns at all times. When the thermostat signals the need for heat, the pilot flame lights the gas burners that heat the water in the tank or the air in a forced-air heating system. The burners turn off when the desired temperature has been reached, but the pilot light remains lit.

#### **Power-saver cord**

This is a thermostat-controlled extension cord that delays the operation of a car block heater until the car block cools enough to require heating. Recent tests show that by using a power-saver cord at -2 °F (-20 °C), the car block heater operated less than one-third of the time and the test car still started with ease pressure-type urinal control valve

These are commercially manufactured valves that regulate the frequency of urinal flushing to occur only when the school is in use. The urinals turn off when the school is vacant. Savings from reduced water consumption easily pay for the cost of installing these valves.

#### **Printer ribbon**

Printer ribbons for dot-matrix printers can be reinked instead of purchasing new printer ribbons. This reduces the amount of printer ribbons entering the waste stream.

## **R**

#### **Rain collector**

Rain collectors can be placed at the bottom of down-spouts from eavestroughs. When it rains, the water runs off the building's roof into eavestroughs or drains. The rain water can be collected in barrels or other containers and used to water flower beds etc. Using rain water to water plants instead of tap water reduces the school's water consumption. There are a number of different types of rain collectors that can be purchased.

### **Rechargeable batteries**

Rechargeable batteries use electricity to "recharge" for reuse. It usually takes six to eight hours to recharge batteries. Rechargeable batteries can be reused as many as 500 times, unlike disposable batteries which, when depleted, are thrown away. Manufacturing disposable batteries can take up to 50 times the energy they contain. In addition, all batteries contain toxic metals which should not be thrown out in the regular garbage.

## **S**

### **Scrap metal**

Scrap metal can be collected and recycled. Scrap metal would mainly be found in schools with industrial arts programs (e.g. automotives). Examples of scrap metal are tin, aluminum and steel. A vast amount of energy is needed to create these items from virgin metal.

### **Serviced**

Keeping vehicles properly serviced through regular tune-ups reduces the emissions they produce and also increases their fuel efficiency.

### **Solar energy**

Solar energy is energy from the sun. Solar energy can be used to heat buildings or to heat water. Systems used to capture the solar energy for heating can be active or passive. An active system, such as solar paneling, uses mechanical equipment to collect, store and transfer the solar energy. Passive systems do not use mechanical equipment (e.g. south facing windows).

### **Space heater**

Portable electric space heaters are often used to heat small spaces within buildings that are not brought to comfortable temperature because of problems such as faulty thermostats, poor insulation, or leaky windows and doors. Electric space heaters use a lot of electricity and are not an energy efficient way to heat a room. Adjusting the HVAC system or making other repairs may be more effective – discuss with the school custodian or District Facilities Representative.

### **Speed (55 mph)**

Reducing the speed at which vehicle travels reduces the amount of fuel used. For highway travel, 55 miles per hour (90 kilometers per hour) is the recommended speed for maintaining a higher level of fuel efficiency.

### **Spring-operated, self-closing taps**

Spring-operated, self-closing taps automatically turn off when your hand releases the tap. This reduces the amount of water used because people cannot accidentally leave the tap on.

## **T**

### **Thermal paper**

Thermal paper is a special kind of heat-sensitive paper used in some fax machines. It is thin and comes in a roll. Due to its coating, thermal paper cannot be easily recycled.

### **Thermostat**

A thermostat is a temperature-measuring device that can switch a circuit on or off at pre set temperatures. The thermostat will turn the furnace or heater on when the room temperature drops below the set temperature and off when the temperature rises above the set temperature. Thermostats are also used to regulate air conditioners and water heaters.

### **Toilet dams**

Toilet dams are commercially produced, water-saving devices that hold back some of the water in the toilet tank when flushed. They can save between 25 percent and 40 percent of the water normally used in a standard toilet.

### **Toner cartridge**

Toner cartridges are used in office equipment such as photocopiers and laser printers. A cartridge is a container for the powdered printing ink. There are companies that refill or re-manufacture toner cartridges for photocopiers and laser printers. This reduces the number of toner cartridges entering the waste stream.

## **W**

### **Water-based (latex) Paints**

Water-based paints are less hazardous than oil-based paints. They also require no hazardous products for cleaning brushes. Soap and water can be used to clean the brushes and the used water can be poured down the drain.

### **Weather-stripping**

Weather-stripping is used to prevent heat loss from a building by plugging cracks around windows and doors. Weather-stripping is used to prevent air leaks on the moving parts of the doors and windows. Several varieties are available at hardware stores. Weather stripping should be checked at least once a year and the worn parts replaced.

### **Window Awnings**

Awnings are fabric or metal covers that are installed above windows and doors to keep the sunshine from shining through windows on hot summer days. This shading helps to keep the school cool.

## Appendix B: Lifestyle Audit Items Checklist

To complete the Lifestyle Audits you will need the following items:

✓	Lifestyle Audits
	Lifestyle Audits Manual
	Lifestyle Audit Action Plan Checklist
	Lifestyle Audits Worksheets
	School Ratings Calculations Worksheet