

# Sustainability Guide

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## Green Business Tools for Sustainability



*City of Chilliwack*



**CHILLIWACK  
CHAMBER OF  
COMMERCE**

Where Business Happens!

Business: \_\_\_\_\_

Contact: \_\_\_\_\_

Phone: \_\_\_\_\_

E-mail: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

# Chilliwack Sustainability Guide

The City of Chilliwack and Chilliwack Chamber of Commerce are supporting local businesses in becoming more sustainable. What do we mean by sustainable? **Business sustainability is about creating more goods and services with less use of resources, waste and pollution.** It helps businesses minimize their environmental footprint while protecting profits and contributing to quality of life in our community.

This **Sustainability Guide** has been developed to help Chilliwack businesses:

- Minimize waste
- Maximize energy efficiency
- Minimize water consumption
- Reduce pollution
- Reduce the use of toxic substances

This easy-to-use guide includes checklists to assist you in reviewing current practices, identifying opportunities for improvement, and monitoring performance. We encourage you to include your employees in the review process, to raise awareness about environmental issues and help identify solutions beyond those recommended in this guide. Many recommendations in this guide can be incorporated into your standard employee training programs.

## **Sustainability Business Awards**

The City of Chilliwack and Chamber of Commerce would like to recognize local businesses that are leaders in environmental practices. Each year, Sustainability Business Awards are announced as part of the Chamber's Business Excellence Awards. Businesses will also be featured on the City's and Chamber's websites.

Entering is easy — just contact the Chamber of Commerce at 604-793-4323 or [info@chilliwackchamber.com](mailto:info@chilliwackchamber.com).

Information is also available at [www.chilliwack.com/greenbusiness](http://www.chilliwack.com/greenbusiness)

Are you a Chilliwack Chamber of Commerce Member?  Yes  No  
(Chamber of Commerce membership is not required to win a Sustainability Award)

# Waste

Reduce  
Reuse  
Recycle



For this part of the guide, we will be exploring your current waste diversion efforts and identifying potential waste reduction options.

## 1. First Step: Understand your Waste Stream

What/how much waste material is being produced? Fill out the simple **Waste Audit Form** on the next page. This information will provide a baseline about waste materials, and help identify opportunities for diversion and cost savings.

### Quick Fact:

The average office worker uses approximately 1.5 pounds of paper each day.

California Integrated Waste Management Board

## 2. Know the Regulatory Requirements

To encourage waste diversion, the following materials are banned from disposal at the Bailey Sanitary Landfill:

- Office paper
- Newspaper
- Catalogues/Magazines
- Boxboard
- Corrugated cardboard
- Plastics #1 - 7
- Beverage containers
- Glass bottles/jars
- Electronic waste
- Scrap Metal
- Batteries
- Clean wood
- Hazardous Wastes
- Tires
- Waste oil, containers, and filters

Note: Partial list only; for other banned materials, please refer to the Solid Waste Collection and Disposal Bylaw at [www.chilliwack.com](http://www.chilliwack.com).

## 3. Manage your Waste (Check any that you already do)

- Reduce unnecessary paper use (eg. print double-sided, avoid printing e-mails, re-use one-sided copies for notes/phone messages).
- Maximize your recycling program and install signage to educate staff, customers, and contractors about what materials can be recycled. Contact a local waste hauler to set up your recycling program (look under "Garbage" in the Yellow Pages). A list of recycling options is available on-line at [www.chilliwack.com/environment](http://www.chilliwack.com/environment) or [www.rcbc.ca](http://www.rcbc.ca).
- Place a recycling container at each desk.
- Have a separate recycling container for beverage (deposit) containers and donate the funds to charity or use the funds for an office function.
- Avoid using disposable food/beverage containers for meetings, in lunch rooms and at company functions.
- Use a whiteboard instead of flipcharts in meeting rooms.
- Look for ways to reuse waste materials in your operation, or perhaps in another company's operation.

## Waste Audit – Know your Waste Baseline

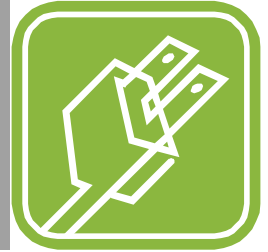
Use the chart below to help you determine your business' waste composition and identify opportunities for diversion (reducing, reusing, or recycling materials currently disposed of). Typical business waste materials are listed below, but feel free to add additional items in the blank rows.

**AUDIT DATE:** \_\_\_\_\_

It is a good idea to review practices every 6 months to monitor progress.

Material	% of Total Waste (Estimate)	Recycled or Reused (✓)	Disposed (✓)	Size of Collection Receptacle	Collection Frequency	Increased Diversion Possible? (✓)
Corrugated Cardboard						
Office/Mixed Paper						
Mixed Containers (glass/tin/plastic)						
Beverage Containers (Deposit)						
Newspaper						
Books/Magazines						
Pallets/Clean Wood						
Plastics						
Scrap Metal						
Batteries (car or household)						
Fluorescent Lights						
Tires						
Food Waste						
Garbage						

# Energy



Be energy efficient! It saves money and reduces air pollution and greenhouses gases. Energy conservation reduces utility bills and the risk of rising fuel prices.

## 1. First Step: Understand your Energy Consumption

Common sources of business energy consumption include:

- Lighting
- Heating, Ventilation and Air Conditioning (HVAC) Equipment
- Office Equipment (Computers, copiers, appliances)
- Vehicles

For information on energy audit and rebate programs, check [www.bchydro.com](http://www.bchydro.com) and [www.terasengas.com](http://www.terasengas.com)

Use the **Energy Audit Form** on the next page to record your annual energy use and identify opportunities to reduce energy consumption.

## 2. Manage your Energy Consumption (Check any that you already do)

### Lighting

- Install timers and/or occupancy sensors to automatically reduce unnecessary lighting.
- Install energy-efficient lighting systems. Retrofit incandescent lamps to compact fluorescent or white LEDs. Replace T12 fluorescent lamps with T8 fluorescent lamps with electronic ballasts to reduce energy use by 35% - 40%.

### Quick Fact:

With the energy you'll save, you will recover the replacement cost of T8 fluorescent lamps within 2 to 3 years.

### Heating, Ventilation, and Air Conditioning (HVAC) Systems

- Automatically reduce heating and cooling outside business hours.
- Maximize natural cooling by ventilating during the night and providing window treatments.
- Optimize system operating parameters through air rebalancing.
- Regularly maintain the system to ensure it operates efficiently. Consider upgrades.
- In fans and pumps, replace single-speed motors with variable- or adjustable-speed motors to reduce energy use by as much as 70%.

### Office Equipment

- Enable the energy-saver features on your office equipment.
- Turn off all equipment at the end of the work day.
- Purchase EnergyStar-rated office equipment (eg. computers, printers, photocopiers).

### Company Vehicles

- Introduce an Idle-Free program to prevent unnecessary idling.
- "Right-size" vehicles to purchase the most fuel-efficient vehicle for the job.

## Energy Audit – Know your Energy Baseline

Use the chart below to help you determine your business' energy consumption and greenhouse gas (GHG) generation. Typical energy types are listed below, but feel free to add additional items in the blank rows.

**AUDIT YEAR:** \_\_\_\_\_ It is a good idea to review practices every 6 months to monitor progress.

Energy Type	Annual Consumption  (A)	Convert to GJ, Multiply by:  (B)	Annual Consumption in GJ (A x B)  (C)	Calculate GHG as Tonnes CO <sub>2</sub> e, Multiply by:  (D)	GHG as Tonnes of CO <sub>2</sub> e (C x D)  (E)
Electricity	kWh	x 0.0036 GJ/kWh	=	x 0.006 Tonnes CO <sub>2</sub> e/GJ	=
Natural Gas	GJ	x 1.0 GJ/GJ	=	x 0.051 Tonnes CO <sub>2</sub> e/GJ	=
Gasoline	L	x 0.035 GJ/L	=	x 0.072 Tonnes CO <sub>2</sub> e/GJ	=
Diesel	L	x 0.039 GJ/L	=	x 0.072 Tonnes CO <sub>2</sub> e/GJ	=
Propane	L	x 0.025 GJ/L	=	x 0.060 Tonnes CO <sub>2</sub> e/GJ	=
<b>Totals</b>	_____	_____	=	_____	=
			GJ		Tonnes CO <sub>2</sub> e

Example: (GJ and GHG Conversions are from Community Energy and Emissions Inventory, 2009)

Electricity	3,000,000 kWh	x 0.0036 GJ/kWh	= 10,800 GJ	x 0.006 Tonnes CO <sub>2</sub> e/GJ	= 64.8 Tonnes CO <sub>2</sub> e
Natural Gas	8,000 GJ	x 1 GJ/GJ	= 8,000 GJ	x 0.051 Tonnes CO <sub>2</sub> e/GJ	= 408.0 Tonnes CO <sub>2</sub> e
Gasoline	50,000 L	x 0.035 GJ/L	= 1,750 GJ	x 0.072 Tonnes CO <sub>2</sub> e/GJ	= 126.0 Tonnes CO <sub>2</sub> e
Diesel	40,000 L	x 0.039 GJ/L	= 1,560 GJ	x 0.072 Tonnes CO <sub>2</sub> e/GJ	= 112.3 Tonnes CO <sub>2</sub> e
Propane	20,000 L	x 0.025 GJ/L	= 500 GJ	x 0.060 Tonnes CO <sub>2</sub> e/GJ	= 30.0 Tonnes CO <sub>2</sub> e
Totals		Total Energy:	= 22,610 GJ	Total GHG:	= 741.1 Tonnes CO <sub>2</sub> e

# Water



In Chilliwack, the Sardis-Vedder Aquifer provides us with excellent quality drinking water, but the supply isn't limitless. Take steps to reduce your water consumption!

## 1. First Step: Understand your Water Consumption

Common sources of business water consumption include:

- Landscaping
- Domestic Uses (Washrooms, Lunchrooms)
- Heating, Ventilation and Air Conditioning (HVAC) Equipment
- Process Water

Fill out the audit form on the next page to record your annual water use and identify opportunities to reduce consumption.

## 2. Manage your Water Consumption (Check any that you already do)

### General

- Repair leaks and implement a preventative maintenance program.
- Reduce flow rates by optimizing the fitting sizes of nozzles.
- Explore options to reuse process water within your operation.

### Landscaping

- Use low maintenance landscaping, including drought-resistant or native plants and water conserving mulch in landscape beds.
- Consider installing a drip irrigation system or soil-moisture sensors and controllers to reduce water use for landscaped areas.

### Washrooms and Lunchrooms

- Install water-saving faucet aerators and showerheads. Faucet aerators can reduce water consumption from 9-18 litres per minutes to less than 5 litres per minute.
- Replace older toilets that use as much as 22 litres per flush with ultra low-flush toilets (6 litres per flush) or dual-flush toilets (6 litre and 3 litre flushes).
- Replace continuous or timed-flush urinals in restrooms with low-flow manual flush or sensor-controlled equipment. This can be as simple as retrofitting the flush valve with a new spring and diaphragm. In new installations, consider waterless urinals, which are easy to install and meet health standards.
- When replacing dishwashers, look for water conserving units.

### Heating, Ventilation, and Air Conditioning (HVAC) Systems

- Consider using chemical treatment to reduce the amount of blowdown required to maintain cooling towers and boilers.
- Retrofit once-through cooling water used for air conditioning and refrigeration equipment (chillers, compressors, condensers, etc.) with recirculating systems. When replacing equipment, consider installing air-cooled equipment in place of water-cooled equipment.

## Water Audit – Know your Water Baseline

Use the chart below to help you determine your business' water consumption. Typical water usage is listed below, but feel free to add additional items in the blank rows.

**AUDIT YEAR:** \_\_\_\_\_

It is a good idea to review practices every 6 months to monitor progress.

Billing Period	Water Usage (cubic feet)
<p style="text-align: center;"><b>1st Quarter</b></p> <p>Start Date:</p> <p>End Date:</p>	
<p style="text-align: center;"><b>2nd Quarter</b></p> <p>Start Date:</p> <p>End Date:</p>	
<p style="text-align: center;"><b>3rd Quarter</b></p> <p>Start Date:</p> <p>End Date:</p>	
<p style="text-align: center;"><b>4th Quarter</b></p> <p>Start Date:</p> <p>End Date:</p>	
<b>Total</b>	

Consumption Source	% of Total Water Usage (Estimate)
Landscaping	
Washrooms	
Lunchroom	
HVAC	
Process Water	

**Quick Fact:**

Summer months are the hardest on our water supply. On an average day, Chilliwack uses 30 million litres of water; but in summer, we use up to 51 million litres of water per day.

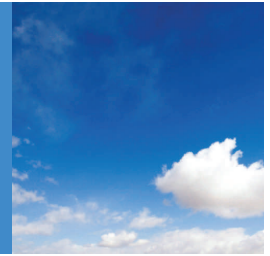
Water sprinkling restrictions are in effect from June 1 - September 30.

Check your water bill for your consumption, particularly during the summer. Are there changes you can make to reduce water consumption?

Water conservation kits and rain barrels can be purchased at City Hall



# Air Quality



Improving indoor and outdoor air quality promotes good health and can increase employee productivity.

## 1. First Step: Understand your Air Emissions

Common sources of business air emissions include:

- Cleaning products, paints and adhesives
- Carpets and furnishings
- Vehicles
- Industrial processes

## 2. Improve your Air Quality (Check any that you already do)

### Indoor Air Quality

- Specify the use of non hazardous, low-VOC (Volatile Organic Compound) cleaning products, paints, adhesives and sealants.
- Specify low-VOC content carpet materials and furnishings manufactured with resins and glues free of urea formaldehyde.
- Reduce air recirculation by increasing ventilation (eg. using a greater supply of outside air).
- Change or modify the air filtration system to eliminate odours from outside.

### Outdoor Air Quality

- Implement an Idle-Free program for company vehicles and encourage staff and customers to reduce vehicle idling.
- Encourage alternative transportation:
  - Provide bicycle racks and showers.
  - Stage an annual Bike to Work Challenge ([www.chilliwack.com/btw](http://www.chilliwack.com/btw)).
  - Promote carpooling by providing a ride-matching service (eg. carpooling board).
  - Offer discounted transit passes.

**Are you an industrial operation with an Air Permit? Yes  No**

If yes, please describe your operation: \_\_\_\_\_

\_\_\_\_\_

- Submit a copy of your permit and your annual air monitoring summary.

# Purchasing



Your purchasing choices can influence suppliers and protect the environment.

## 1. Understand the Environmental Impacts of your Purchases

Businesses can contribute to protecting the environment through the products and services they buy. Environmentally preferred products are designed to reduce environmental impact throughout their life cycle, from manufacture through end-use to disposal. These products make efficient use of resources, produce fewer polluting by-products, reduce waste, are reusable in whole or in part and are recyclable. Are your purchasing practices sustainable?

## 2. Implement Sustainable Purchasing Strategies (Check any that you already do)

- Buy recycled-content products whenever possible (eg. office paper, toilet tissue, paper towels).
- Buy durable, reusable, high-quality supplies such as reusable toner cartridges or refillable pens. These products will last longer and help delay replacement and disposal costs.
- Buy products that are recyclable and have recyclable packaging. Watch out for Styrofoam; although it is technically recyclable, there is currently not a sufficient market for it to be recycled in BC.
- Buy only the amount of product you need to avoid the cost of purchasing and disposing of unused products. Ask your suppliers about taking back products for reuse, recycling or disposal.
- Reuse packaging materials or talk to suppliers about reducing excess packaging and ask them to take back shipping boxes and pallets.
- Specify in your cleaning services contract that biodegradable or less toxic cleaning products be used.
- Purchase EnergyStar-rated office equipment, such as computers, printers, photocopiers and fax machines.
- Prolong equipment life with proper maintenance.
- Create purchasing guidelines to support sustainable purchasing. Inform your suppliers and your employees of these guidelines.
- Talk to your suppliers to help you find products that are:
  - Designed to minimize waste (eg. reduced packaging)
  - Energy efficient
  - Less polluting than competing products
  - Free from hazardous compounds
  - Manufactured from recycled materials, including a high percentage of post-consumer recycled content
  - Durable, with a long service life

### Quick Fact:

What most people see in their garbage cans is just the tip of the material iceberg. A product itself contains, on average, only 5% of the materials used in the process of making and delivering it.

Metro Vancouver, Smart Steps

