

COMMERCIAL WATER EFFICIENCY GUIDE



IT'S SMART BUSINESS TO BE WATER WISE

Save 15% - 30% of your water usage through simple maintenance practices.

- Read and monitor water-use records monthly.
- Regularly check for leaks in all equipment, appliances, piping, steam lines, solenoid valves and related connections.
- Shut off water supply to areas, equipment, and fixtures that are not in use.
- Reduce loads on water-cooled air conditioning units by shutting them off when and where they are not needed.
- Install a pressure-reducing valve, where appropriate, to reduce incoming flows and leaks in equipment and plumbing.
- Maintain and clean cooling and heating systems.
- Recycle and reuse water wherever feasible.
- To protect water lines from freezing, install shutoff valves rather than running water continuously.

- Maintain insulation on hot water pipes to minimize heat loss.
- Choose water efficient models when purchasing new equipment, appliance, fixtures, and irrigation systems.

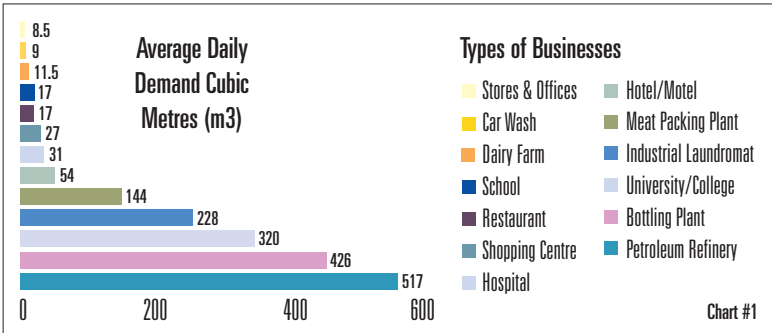


IN APARTMENTS AND COMMERCIAL BUILDINGS

The following no-cost or low-cost alternatives will help save water and money.

Sub-metering:

Sub-metering is the most important water efficiency step for commercial/industrial customers. Sub-metering helps you know where water use occurs and helps the employees monitor their discretionary use.



Sub-metering also helps determine when new water efficient equipment is justified and quickly locates leaks so they can be repaired.

Check the meter:

Is water use in the building slow or steady? Check the building water meter reading during off-hours as the first step for leak detection.

Leaks:

There are several methods to finding leaks, including putting food dye in your toilet tank to see if colour leaks into the bowl. If you find leaks, repair them quickly or replace the problem fixture.

Water-use Audits:

In order to understand your commercial facility's water

usage pattern, conduct a water use audit.

Know the expected water use rates:

You should know the water use rates per tenant, per hotel room, average restaurant use, etc. Knowing these rates will help you understand your usage patterns and alert you to any variances. (See Chart #1)

WITH FIXTURES AND APPLIANCES

Toilet fixtures

Toilet fixtures are the largest single water using fixture in many commercial/industrial facilities. New dual 3 litre/ 6 litre per flush toilet fixtures offer very large savings over existing 20 litre per flush toilet fixtures. The price of 6 litre per flush fixtures is comparable to

Estimated Yearly Water Savings Using ULF Toilets		
Market Segment	Yearly Water Savings per ULF Toilet (m ³)	Yearly \$ Savings per ULF Toilet*
Restaurant	65	\$ 98
Retail Store	52	\$ 78
Apartment (2 tenant suite)	51	\$ 77
Multi-Use Facility	40	\$ 60
Health Care Facility	29	\$ 44
Office	27	\$ 41
Hotel/Motel	22	\$ 33

* \$1.50 per cubic metre for combined water & sewer charges Chart #2



a standard mid-price toilet. These efficient toilets will become mandatory in new buildings within a couple years. Replacement of older, existing toilets offers many opportunities for quick cost savings. (See Chart #2)

Showerheads

Efficient showerheads have improved greatly over the last

few years and are now available in many styles including massage features. Water efficient showerheads also reduce hot water requirements, and the cost of heating the water.

Aerators:

Install low-flow aerators on apartment faucets. (1.5 GPM aerators or spray aerators for kitchen faucets).

Dishwashing machines

Efficient dishwashers typically use slightly less than half the volume of water used by existing dishwashers. At present, the more efficient models (mostly of European design) are more expensive than the commonly sold models. But after a payback

period of typically less than one year, the more efficient models begin to generate consistent cost savings.

Washing machines

Efficient clothes washing machines use up to half the amount of water used by older appliances. The price of the more efficient models is starting to come down so compare the rated water-use and the anticipated frequency of appliance use to determine the payback period.



Outdoor irrigation systems

Many automatic irrigation systems are controlled with a timer. Invest in an inexpensive moisture sensor which ensures the system does not operate unless watering is actually required.

Water Softeners

Solenoid valves on water softeners often fail resulting in large water losses. Frequent checking and replacement with quality valves can protect your business from losses.

Humidifiers

Some models of new humidifiers (the "sprayer" types are controlled with a moisture sensor) are proving much more prone to leakage than the older float operated models. Frequent checking, cleaning and selection of simple mechanisms can reduce the risk of loss.

Refrigeration Systems

Restaurants, retail stores and fast-food outlets are just some of the locations where once-through condenser cooling is used. These types of systems should not be installed because they typically waste thousands of dollars of water in a year. Air cooled or closed loop systems cost a little more to install but offer huge savings in water costs over the course of the first year of operation.

CHOOSING AIR OR WATER COOLED REFRIGERATION

Remote air-cooled units

If there is no free air for cooling, either the air-cooled unit or the air-cooled condenser can be placed in a remote location. A remote air-cooled system is commonly used on larger systems such as in supermarkets. But this system is more complex and expensive to install.

Outdoor (roof-top) air cooled units

Outdoor (roof-top) units are refrigeration system packages designed to operate outdoors under all conditions. They do not use any water and all heat and noise is removed. This kind of system is expensive, however. They cost approximately twice as much as a water-cooled system.



Water-cooled refrigeration systems

Recirculating water-cooled units are used when there is a lack of free air to remove the heat generated by the refrigeration system. Air-cooled units have fans which cause noise while water-cooled units are quieter. If the area is dusty or greasy, an air-cooled condenser can become plugged. There is less maintenance associated with recirculating water-cooled units.

For more information, visit our website at www.epcor.ca or call us at 310-4300



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Here are some examples of common conservation technologies that can be installed to save water and operating costs.

END USE	CONSERVATION TECHNOLOGY
KITCHEN	
Faucet	Faucet aerator
Dishwasher	Water efficient models; automatic shut off
Garbage disposal	Garbage strainer
BATHROOM	
Faucet	Faucet aerator; automatic shut-off; infrared faucet; self-closing faucet
Toilet	Ultra low flush toilets (3L and 6L)
Urinal	Ultra low flush and "waterless" urinals
Shower	Low flow showerhead
LAUNDRY	
Washing Machine	Horizontal axis washing machine; continuous batch washer; rinse water reclamation; wash water reclamation; computer automated control system
SANITATION	
Facility Cleaning	Dry extraction carpet cleaning system; automatic shut-off valves; pressure-reducing valves
Sterilizer/autoclave	Flow-metering; control valves; air pressure host
Equipment washing	Wastewater Reclamation
IRRIGATION	
Spraying	Moisture sensors and timers; rainfall sensors
Planting	Low water use plants and shrubs; replace lawn
Decorative water items	Recycle; reclamation of water
RECIRCULATING COOLING	
Cooling tower	Conductivity control, maintenance of make-up valves; recycling; add acid to reduce carbonate scale
Evaporative cooler	Recirculating pumps; eliminate excessive bleed-off
Boiler	Eliminate excessive blowdown; eliminate mixing valve water; ion exchange
ONCE-THRU COOLING	
Air Conditioner	Air-cooled equipment; reduce flow rate
Air Compressor	Connect to recirculating cooling system
Vacuum pump	Convert to mechanical vacuum pump

Adapted from "Best Available Technologies Program: Industrial/Commercial Water Uses Conservation Opportunities" by Black & Veatch

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05/02

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