

# Once-Through Cooling Retrofits

## CRD Rebate Program Information

### CRD Environmental Services

**Once-through cooling (OTC) systems, also known as single-pass cooling systems, use municipal drinking water as a means to remove unwanted heat.** These systems remove heat by transferring it to a supply of clean, cold municipal water and discharging it directly to the sewer.

On first look, OTC systems seem less expensive but they're actually quite costly in the long run. Though they're often used for small commercial cooling loads because they can be less expensive to install, the cost of water to operate a small OTC system for two years is usually more than the cost of installing an air-cooled waterless system.

For example, a typical small/medium 12,000 BTU/hour (one ton or roughly one horsepower) OTC condensing unit uses more than one million litres of water per year. Assuming the unit lasts for 10 years, the cost of water would be \$66,000 over its lifetime. **Facilities like restaurants often have several units, which combined sends tens of thousands of dollars per year of clean water down the drain.** On top of the cost of water, each once-through cooling system also needs a backflow-prevention device that requires annual testing.

### Saving Water is Everybody's Business

Industrial, commercial and institutional customers of the Greater Victoria water supply system can receive a rebate of **\$600** to eliminate a mid-sized OTC cooling condensing unit, **\$300** for a mid-sized ice maker and up to a maximum of **\$2,500 per account** to replace OTC condensers in a range of equipment, including industrial air conditioners, wok stoves, coolers and ice machines—plus they'll save on their water bill every year with a less wasteful system!



*Typical once-through cooling condensing unit*

### Alternatives to Once-Through Cooling

Cost-effective options for replacing a once-through cooling system include:

- Installing stand-alone air-cooled ice machines or condensing units
- Recirculating cooling water to a remote air-cooled chiller or cooling tower, or
- Connecting to a heat exchanger set up to preheat hot water for savings in both water and energy

Installation cost and payback period varies with the complexity of the system but **replacing a small commercial system often pays for itself in as little as 18 months.** The increased energy efficiency of more modern equipment often yields even greater savings.

Switch now,  
save forever



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[www.crd.bc.ca/otc](http://www.crd.bc.ca/otc)