

Saving Water in Vehicle Wash Operations

You Might Be Surprised by How Much You Can Save

Many commercial vehicle washing facilities are more efficient than hoses and buckets, so they already do their part to save water. But like any business, improving efficiency benefits the bottom line, and by reducing water you can also save energy and benefit the environment.

Water use in vehicle washing depends on the type of facility, how it is maintained, and whether it incorporates water recycling. Well maintained self-serve facilities typically use about 60 litres per vehicle (lpv) without recycling wash water, and automatic systems with water recycling can use less than 30 lpv. However, without water recycling or rigorous maintenance, automatic systems can easily use more than 300 lpv.



Automatic car washes can use more than 300 litres of water to wash a single car

Natural Resources Canada estimates that an average commercial car wash uses 260 lpv of heated water, and uses 1,300 gigajoules per year heating water to wash cars. Based on these estimates, a 20% improvement in water efficiency would save a typical automatic car wash in Greater Victoria about \$1,500 in water and sewer costs and over \$3,000 in energy costs annually.

Easy Ways to Save Water and Energy

- Check alignment of nozzles regularly
- Check for water leaks regularly and repair them immediately as they occur
- Replace spray nozzles regularly as they wear
- Reduce operating water pressure
- Replace brass or plastic nozzles, which erode quickly, with low flow stainless steel or hard ceramic nozzles
- Maintain all equipment to original or improved specifications for water usage
- Use positive shut off valves on all hoses, faucets and extractor sinks
- Regularly check toilets and urinals for leaks, and fix leaks immediately
- Replace old, frequently used toilets with new high-efficiency models. Retrofit continuously flushing (overhead tank) urinals with occupancy sensor controllers
- Use drought tolerant landscape plants
- Install a 365-day irrigation controller and rain sensor.
- Adjust weep systems to come on at 0°C (32°F)
- Use less water in towel washing machines by doing fewer but fuller loads
- Install automatic high-level water cut-offs in towel and chamois washing machines
- In automatic systems, adjust timers so nozzles start precisely as a vehicle comes into range, and shut off precisely as it moves out of range



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Recycling Water

The CRD Regional Source Control Program requires every commercial vehicle washing facility to have an interceptor tank to remove soil and grease from wash water before it enters the sewer. The incremental cost to reclaim water from the interceptor tank and condition it for reuse in the vehicle washing system may be relatively small, and the savings can be big. Although self-serve wash systems are typically not cost-effective to reclaim because they use relatively little water to begin with, automatic systems are often good candidates for retrofits.

The costs and potential savings of retrofitting an automatic vehicle wash system for water recycling are highly site-specific. Although retrofit costs are typically tens of thousands of dollars, the available water savings are often 50-80%. The annual water and energy cost savings may be over \$15,000, so the payback period can be as little as three years to retrofit an existing car wash. It is important to include the costs of operating and maintaining the treatment system when making a business case to recycle water.

Saving in Seattle

Before installing a water recycling system at a total cost of US\$85,000, Gray Line of Seattle had used 1,300 litres per vehicle (lpv) to wash its buses. The system was expected to reduce water usage to 130 lpv of fresh water. According to Phil Paschke of Seattle Public Utilities, a spot check of the system found the bus line using only 100 lpv of fresh water to wash the buses – a 92% reduction in water use!

Also in Seattle, a professional tunnel car wash reduced its water use from 260 to 60 lpv by installing a recycling system – a 77% reduction in water use at a cost of US\$41,000.

Consider a Water Audit



A water audit can determine how much water your facility uses per vehicle washed, and can identify the most cost-effective ways to save water at your facility, from replacing nozzles to installing recycling systems. In addition to vehicle washing, the audit process examines all other water uses on the property, including washrooms and landscape irrigation. ***The CRD offers free water audits to businesses connected to the Greater Victoria Drinking Water Supply.*** Contact us if you are interested in a water audit.

For more information

Contact CRD Water Conservation at waterwise@crd.bc.ca or 250.474.9684, or visit www.crd.bc.ca/water/conservation/ici for detailed information about audits, rebates and other resources to help you identify cost-effective ways to save water. Don't let your savings go down the drain!



Saving Water is Everybody's Business.