

Car wash pollution and the numbers to prove it

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Jul 30 2009, 11:26 PM · **UPDATED**

For years, environmentalists have told the public that washing their cars in the driveway is detrimental to local waterways.

Federal Way city staff now have the numbers to prove it, thanks to a recent study conducted by the Surface Water Management Division.

The Residential Car Washwater Monitoring Study, published in July 2009, was completed as a way to educate the public about stormwater pollution. In 2007, the state's Department of Ecology (DOE) issued the Western Washington Phase II Municipal Stormwater Permit. It requires Federal Way, and several other municipalities, to put in place programs to manage pollution that is mixed in with stormwater discharge. The permit also requires the jurisdictions to help cut down on the waste by educating the public.

Water pollution

Five weekend fundraising car wash events, which took place in 2007 and 2008, were used as samples for the study. City staff chose to measure the pollutants from these events, rather than take data from various individual locations across the city. Based on evidence collected during the events and the annual estimated amount of residential car washing taking place in Federal Way, staff found Federal Way residents who wash their cars on impervious surfaces significantly pollute surrounding water bodies, including Puget Sound.

"One residential car wash may not contribute a whole lot, but when we looked at the big picture, it kind of hit home that this is a pretty significant contribution to our system of stormwater pollution," said Dan Smith, surface water quality program coordinator.

Oil, phosphorous, ammonia, surfactants and solid wastes are all typical contaminants from residential car washing, according to the study. Staff estimates Federal Way residents annually deposit 190 gallons of gasoline, diesel and motor oil, 400 pounds of phosphorous and nitrogen, 60 pounds of ammonia, 2,200 pounds of surfactants and 30,000 pounds of solid wastes into the city's stormwater drainage system, according to the study.

"Stormwater professionals would not be surprised that (residential) car washing contains a certain amount of pollutants," Smith said.

Stormwater and materials caught up in the water will flow to nearby creeks, streams and lakes. These then transport the items to the Puget Sound. The stormwater catch basins are designed to restrict solids from entering the drainage system, but pollutants slip by sometimes, Smith said.

Implementing cleaning technology at the end of each stormwater drainage pipe would come at an astronomical cost, he said.

Noticeable effects

The harmful materials that find their way to the region's waterways reek chaos on aquatic life. Products such as oil can contaminate wildlife. Phosphorous and nitrogen can lead to excessive plant growth and decay, which degrades water quality, according to the study.

Federal Way staff chose to measure pollution caused by residential car washing activities because the DOE permit urges municipalities to educate their publics on the harms of residential car washes. The pollutants are usually easy to spot. Soap, creates a visible foam.

The foam can be swept up as it flows to a catch basin, according to the study. Estimating when the pollution will take place is also fairly predictable, as many residents wash their vehicles on nice days, according to the study.

Changing ways

The study indicates Federal Way residents need to get smarter and care more when it comes to washing their vehicles. To be a better steward of the Puget Sound and local waterways, city staff urges residents to wash their vehicles in the grass or gravel. Pollutants sink into the ground. Less make their way into storm drains this way. Smith and his colleagues hope the study helps residents put the problem into perspective and change their ways.

"Changing behavior is the hardest thing," he said.

The city supplies car wash kits at no cost to charity car washing events. Power cords, hoses, a submersible pump and a plastic insert that fits into the catch basin help restrict car wash runoff from entering the stormwater drainage system.

Check it out

Read the full [study by visiting the City's Web site](#), and clicking on "Surface Water Management." Call (253) 835-2793 for a complimentary car wash kit.