

Brake Pads and Water Pollution

Each time drivers step on their brakes, small amounts of debris are released onto streets, into the air and, eventually, into waterways. Much of this debris contains copper. California drivers use their brakes hundreds of millions of times a day. The cumulative impact of this copper can take a toll on water quality.

Dissolved copper is toxic to phytoplankton, which makes up the base of the aquatic food chain. It also [impairs salmon's ability to avoid predators](#) and deters them from returning to their home streams to spawn. State and local water quality managers are actively working to keep copper levels in San Francisco Bay and local creeks in check.

Scientific studies show that brake pads contribute more than half of the copper in urban runoff. Other sources of copper in Palo Alto creeks and San Francisco Bay—like [copper roofs](#), [copper piping](#), algaeicides, antifouling paints, and industrial runoff—are being actively managed by state and local government programs.

Since it is dispersed widely in the urban environment, material worn off of brake pads cannot be collected, nor can it be readily removed from runoff when it rains. The only practical solution to this water pollution problem is to stop the pollution at its source by limiting copper use in brake pads.



Recognizing that well-functioning brakes are critical for public safety, the City of Palo Alto sought to work cooperatively with the vehicle industry to tackle the problem of copper in brake pads. With the assistance of Stanford University, Palo Alto initiated the [Brake Pad Partnership](#), a collaborative group of government staff, brake pad manufacturers and environmentalists, to work out a solution.

The Partnership conducted a 10-year scientific investigation into the role automobile brakes play in copper levels within San Francisco Bay Area watersheds (see inset). The results of these studies clarified the importance of brake pad copper in urban watersheds throughout California.

After evaluating a number of strategies, Partnership members reached consensus that the most effective course of action would be to pursue legislation that phases out copper use in brake pads. Establishing requirements through legislation ensures that the marketplace will be fair for manufacturers transitioning to new brake pad formulations and provides for a managed transition to environmentally preferable brake pads.

At the request of the Brake Pad Partnership—and with the support of brake pad manufacturers, environmental organizations, and municipalities across California—State Senators Christine Kehoe (San Diego) and Joe Simitian (Palo Alto) are co-authoring [SB 346](#) to implement the brake pad copper phase-out. Please see the [Brake Pad Partnership website](#) for the current status of SB 346

