

The Future of Automobility Is (Almost) Here: Google's Self-Driving Car

by [Marc Scribner](#) on May 18, 2012

This morning, CEI's resident transportation policy junkies — General Counsel Sam Kazman and myself — had the opportunity to test-ride Google's prototype [self-driving car](#) in downtown Washington, D.C. In October 2010, [I wrote about the Google driverless car's feat](#) of secretly logging 140,000 miles on U.S. public roads without a single accident. Sam and I were able to ask questions about the car's features, practical traffic concerns, and the future implications of driverless automobiles with respect to crash reduction, congestion mitigation, and air quality improvement.

Google's car uses a wide variety of sensors that detect pedestrians, objects, and infrastructure in real time. It is the sustained rapid collection of conditions data that allows the car to slow or stop suddenly if a pedestrian enters the street, a car suddenly changes lanes or pulls away from the curb, or a lane is closed for construction or an event. It was quite impressive to see all of this happen right before our eyes.

Of course, there are still kinks to be worked out. Most small debris, say paper or a plastic bag, would not erroneously be detected as a collision threat by the Google car's forward-mounted radar. But small metallic objects, say a discarded can of soda, potentially have a radar cross-section large enough to trigger a crash-avoidance response. This is a problem, but one Google's engineers hope to solve in the coming years.

But these slight technical glitches should not overshadow the monumental progress robotic cars represent. Given that a computer is far more precise and subject to far fewer potential errors than a human, accident rates will plummet when these vehicles become available to consumers. While fatal crash rates [have been falling](#) thanks to improved technology (due to both vehicle and infrastructure safety improvements), the crash reductions that would result from adopting driverless technology would make past progress seem like a drop in the bucket.

Comparatively slow human response times cause much of our congestion. For commuters alone — excluding freight delivery and other business trips — the Texas Transportation Institute estimates congestion costs the U.S. economy [over \\$100 billion annually](#) in wasted fuel and time. Cato Institute Senior Fellow Randal "[Antiplanner](#)" O'Toole is fond of [this video](#) showing how serious congestion can form with even tiny initial driver errors,

which then cascade through the system. Driverless cars would greatly mitigate if not entirely eliminate this problem if market penetration rates are high enough. Think about it: we could convert existing highway lanes to robo-car-only lanes and carry several times as many vehicles at high speeds, all spaced mere inches apart and traveling more safely than manually driven vehicles.

Another major benefit would be improved air quality, as the intensity of urban air pollution is directly tied to congested road conditions. Cars could potentially be made lighter thanks to reduced crash risk, improving fuel economy and reducing pollution output per vehicle mile traveled.

Right now, the biggest hurdles are not on the production side. Rather, it is government policy. Laws will need to be updated to reflect this new reality — and allow it to move forward. Nevada has taken the lead by explicitly legalizing driverless cars and becoming the first state to [issue an autonomous license](#). Several other states are currently considering similar legislation.

But what of liability issues? Google does not seem too concerned, and after giving it some thought, neither am I. We already have [event data recorders](#) in new automobiles that can be used in both civil and criminal court cases to determine who or what is at fault — human or automotive system. Upgrading a car's "black box" technology to accurately record who or what fails when it fails inside a driverless car, and then assigning liability accordingly, would not constitute a huge undertaking.

Google believes its driverless car technology could potentially be available to consumers within the decade. Let me put it this way, we can expect the roll-out of the most significant automobile technical advance since Henry Ford's assembly line in less than 10 years! And arguably, this could be even more world-changing. I, for one, welcome our new robot overlords — er, *chauffeurs*.