

# Google counts blessings of rain for testing self-driving sensors

January 11 2016, by Nancy Owano



The finalized prototype of Google self-driving car. Credit: Google

Google has been releasing monthly reports about its self-driving car program. Tech sites are talking about Google's self-driving report for December, which has information about how they are working to make sure the cars perform well in less than sunny conditions. The testers need to assess how these cars behave in rain and snow.

"After a multi-year drought, we're finally starting to get some [rain](#) in [California](#). It's not only a welcome relief for farmers and gardeners, but an opportunity for our cars to get more time learning in cold and rainy weather."

The project team said, "we've made sure our cars are aware of how rain may affect their ability to drive. Our cars can determine the severity of the rain, and just like human drivers they drive more cautiously in wet conditions when roads are slippery and visibility is poor."

Their sensors – particularly the cameras and lasers—have to deal with inclement weather.

*Android Headlines* said that "Sensors have gotten better, through testing and improvement, at seeing through the rain and now Google is working on getting them to figure bad weather into their driving. Things that human drivers do as a knee-jerk reaction, such as driving slower and taking [slower](#), wider turns in heavy rain or snow, are things that the self-driving cars have to be taught."

The "Google Self-Driving Car Project" monthly report for December stated that they have had to come up with their own equivalent of a "windscreen wiper on the dome to ensure our sensors have the best view possible." Tiny windshield wipers were built to help the rooftop sensors better navigate inclement weather.

What exactly do they have to "teach" their cars? "Our laser sensors are able to detect rain, so we have to teach our cars to see through the raindrops and clouds of exhaust on cold mornings, and continue to properly detect objects. We're helped by our diversity of sensors, since our radars have no problem seeing through this sort of clutter."

*The Verge*: "Google says the latest version of its LiDAR [sensors](#) (light

and radar) are able to detect rain, as well as clouds of exhaust on cold mornings. Like human drivers, the company's self-driving prototypes, which are currently logging miles in Mountain View and Austin, can tell the difference between a drizzle and a downpour, and can adjust their speed and [technique](#) accordingly."

Also of note is that Google said its cars will automatically pull over and wait if the conditions get a little too out of hand. "For now, if it's particularly stormy, our cars automatically pull over and wait until conditions improve (and of course, our test drivers are always available to take over)."

Under the heading "Traffic Accidents Reported to CA DMV" the answer was "None for the month of December."

The Google project team said they were currently averaging 10,000 to 15,000 autonomous miles per week on public streets.

**More information:** [static.googleusercontent.com/m...orts/report-1215.pdf](http://static.googleusercontent.com/m...orts/report-1215.pdf)

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