

## **When, Where and Why Roads Become Slippery - Some Objective Testing By Gorski Consulting**

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During wintertime we encounter far too many incidents where roads become slippery and serious collisions occur. When interviewed by news agencies, those responsible for roadway maintenance often indicate that they did all they could. Meanwhile police continue to remind motorists to "drive for the road conditions", while other members of the public make rude comments about the mental weakness and recklessness of other drivers.

It has been our experience that when roads become slippery it is often not easy to detect. We also have noted that road conditions seem to vary from one road segment to another, beyond the expected areas such as on bridges and at intersections.

In this confusion of strongly held views there is little objective and publicly available information about how slippery roads get and how that condition changes from hour to hour or from one road segment to another.

We at Gorski Consulting are developing ways to objectively study the surface conditions of roads in our area and make that data available to the public. To do this we have devised the use of multiple video cameras that are attached to a test vehicle which is then driven over a number of roads. The video data is then synchronized and the various views are used in conjunction to demonstrate the road conditions. This article will provide a brief description of our testing procedures.

In our latest testing we have used four video cameras anchored to various areas of our test vehicle, a 2007 Buick Allure passenger car.

In the upper left photo of the following page is a view of a video camera that is mounted with a suction cup to the centre dash of the vehicle interior. This camera provides a forward looking view through the windshield so the analyst can obtain general knowledge about the area in which the data is being gathered.

In the Upper right photo of the following page is a view of a camera mounted in front of the instrument panel and pointing to instrument panel gauges such as the speedometer and tachometer.

The photo in the bottom of the following page shows a video camera mounted to the left corner of the rear bumper and pointing partly onto the rear tail-light and also pointing partly onto the road. During braking the camera pointing at the speedometer indicates the initial speed of the vehicle, while the camera pointing at the brake light indicates when the brakes are activated. As a vehicle decelerates the time of deceleration and the speed loss are used to obtain average rates of deceleration. Also, for instances of braking to a stop, the camera pointing onto the ground provides an indication of when the vehicle comes to a halt and therefore levels of deceleration during maximum braking are also obtained.



A fourth camera is mounted at the left corner and underneath the front bumper, as shown in the two photos below. This camera provides a close-up view of the road surface when the vehicle travels on snow covered and icy surfaces.



The views from all these cameras are inserted onto a video editing project using Adobe Premiere. It is not unusual for us to use 10 to 12 video cameras in a single testing session. Due this large number of views the video is separated into several Premiere projects that are then displayed on several computer screens. This allows a detailed view of the contents of each video. As test results become available we hope to post them on the Articles page of this website.

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