the ISSUE

Improve understanding of driver behavior, particularly speed selection, during winter road conditions in order to address high speed variation and associated decreases in road safety during adverse weather.

the RESEARCH

Models were developed for speed selection behavior based on different weather parameters. Truck percentage was also included in the model because of its important impact. Furthermore, an analysis was done to identify how sensitive traffic operations are to changes in the weather-related parameters during adverse weather conditions. A model was developed in VISSIM tool using observed traffic parameter data during ideal and different storm events.
the **FINDINGS**

Pavement surface conditions were found to have a significant negative impact on reductions of average speed. The impact of truck percentage is similar to other weather parameters in the model and was found to have a significant impact on reducing average speed. It was also found that shorter headways and spacing were decreased during non-ideal weather conditions. Average speed was found to be more sensitive than average spacing. Procedure guidelines for calibrating adverse weather conditions in VISSIM developed on the basis of the sensitivity analysis on VISSIM parameters. An important conclusion from this project is that VISSIM can be used to calibrate the impacts of adverse weather conditions on traffic operations, allowing for its use in testing the impacts of adverse weather conditions before being deployed.

the **IMPACT**

Increased understanding of driver behavior in adverse weather conditions is critical to developing and successfully implementing weather responsive traffic management strategies.

For more information on this project, download the entire report at [http://www.ugpti.org/resources/reports/details.php?id=960](http://www.ugpti.org/resources/reports/details.php?id=960)