



Pennsylvania
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New Partnership Tackles Snow Squalls, Supports Safer Winter Travel

Middletown, PA — Winter weather is here, and navigating the unique hazards of snow squalls is crucial for drivers to ensure their safety and the safety of others on the road. Thanks to a new partnership, drivers could soon get more relevant information to help them stay safe on the roads.

The **Pennsylvania Turnpike Commission** (PA Turnpike), the **Pennsylvania Department of Transportation** (PennDOT) and **Pennsylvania Emergency Management Agency** (PEMA) are teaming up with the **National Weather Service** (NWS) and the **National Oceanic and Atmospheric Administration** (NOAA) to prioritize roadway safety and further study how snow squalls affect driving.

“We have seen snow squalls occur on the Turnpike, and it definitely affects how people drive, which is why we want to support this study and hopefully help educate drivers on how to safely navigate through a snow squall,” said Craig Shuey, Chief Operating Officer for the PA Turnpike.

A snow squall is a brief and intense period of heavy snow (up to 2 inches in 30 minutes), strong winds (30+ mph), and whiteout conditions (visibility less than ¼ mile). Due to their isolated and intense nature, snow squalls can catch drivers off guard and lead to major transportation impacts, including multi-vehicle crashes.

In order to help drivers visualize what it is like to drive into a snow squall, Dr. Jase Bernhardt from Hofstra University is developing a virtual reality snow squall simulator. Dr. Bernhardt, who teaches courses in sustainability, climate change and weather for Hofstra University, secured a grant from the Road to Zero Traffic Safety Program and has partnered with meteorologists from the National Weather Service office in State College, PA, who have served as subject matter experts to ensure the accuracy of the simulation. The virtual reality simulator will be used to study how drivers react to snow squalls.

“The simulator immerses the participant in a snow squall with 360-degree graphics and surround sound, while vividly depicting what happens when proper caution is not taken,” said John Banghoff, Lead Meteorologist with NWS State College.

The reactions of those using the simulator will be documented, analyzed and shared with supporting transportation organizations. Based on a deeper understanding of the drivers’ unique

perspectives, the agencies can then provide more timely and relevant information on driving through snow squalls when motorists have no way to safely exit the highway.

“If you are driving on an interstate when a snow squall warning is issued, the best thing to do is to exit the roadway at the next opportunity,” said Executive Deputy Secretary for PennDOT Larry Shifflet. “If you do get caught driving in a snow squall, avoid slamming on your brakes, turn on your headlights and hazard lights, stay in your lane, and increase your following distance. And buckle up! Your seat belt is your best defense in the event of a crash.”

On days when snow squalls are possible, the NWS will brief its partners, including the PA Turnpike, PennDOT, PEMA, public safety and emergency management officials, and many others. These agencies can then activate changeable message signs, variable speed limits, and wireless emergency alerts to convey the impending danger from snow squalls to motorists and the public.

[As part of these safety measures, variable speed limit \(VSL\) signs](#) quickly reduce speed limits when visibility or roadway conditions present the need for more cautious driving, such as during a snow squall. PennDOT has 78 VSL signs located along Interstate 80 and I-81. Locations were chosen based on crash and weather data, such as frequency of wintry conditions that demand safer driving, and where crashes caused by whiteout conditions led to roadway closures of more than three hours.

- 36 locations along I-80 in Centre, Clearfield, Clinton, and Union counties (mile marker (MM) 97-210).
- Six locations on I-80 in Clarion and Jefferson counties on the approaches to Emlenton Bridge (MM 42-45), North Fork Bridge (MM 78-81), and Kyle Lake Bridge (MM 92-95).
- 36 locations along I-81 from I-78 to I-80 in Lebanon (five locations), Luzerne (seven locations), and Schuylkill (24 locations) counties.

Data shows VSL signs have decreased crashes by an average of 20 percent on I-80 when compared to the previous five-year average. Serious injuries and fatalities in crashes also decreased by an average of 30 percent for the same locations, while full road closures decreased by 17 percent. Data shows crashes decreased by an average of 3 percent on I-81 in Schuylkill County, while serious injuries and fatalities decreased by 33 percent.

While the VSLs are in place, permanent speed limit signs are covered, and the normal posted speed limit is displayed on the VSL unless visibility or winter weather conditions call for slower speeds. When speed limits are reduced, a yellow light at the top and bottom of the VSL will be flashing to ensure motorists are aware of the change.

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