

# Traffic Topics Webinar

Rumble Strip Noise Evaluation

Tuesday, January 20, 2015, 2-3 p.m.

Water's Edge, conference rooms A&C

To access the webinar:

[Join online meeting](#)

<https://portal.055d.dedicated.lync.com/state/meet/kelly.koppy/QPFVJ37V>

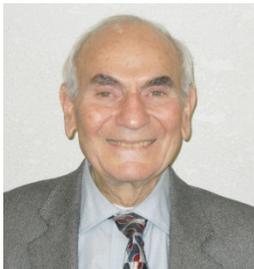
[First online meeting?](#)

If you are unable to access audio through Lync, listen via conference call:

dial-in number: 888-742-5095

conference code: 1658926687

## Presenters:



### **Dr. David Braslau**

Dr. David Braslau, President, David Braslau Associates, Inc. received his Bachelor of Science degrees from the Massachusetts Institute of Technology and his Master of Science and Doctor of Philosophy degrees from the University of California at Berkeley. Following employment in the aerospace and engineering industry and teaching at the University of Minnesota, he established the firm of David Braslau Associates, Inc. in 1971, to address environmental noise, acoustics and vibration problems. He was part of a team that assisted in developing the Minnesota State noise standards and has completed numerous studies in highway, aircraft and railroad noise as well as for many other noise sources. He is a member of the Acoustical Society of America, Institute of Noise Control Engineers, and is the Firm Representative and Board Member, National Council of Acoustical Consultants. He is also a life member of the American Society of Civil Engineers and the Institute of Transportation Engineers.



### **Ed Terhaar**

Ed Terhaar is a traffic engineer at Wenck Associates with experience in traffic impact studies, traffic signal design, and traffic safety research. Mr. Terhaar graduated in 1992 from the University of Minnesota with a B.S. in Civil Engineering. After graduation, Mr. Terhaar joined Benshoof & Associates as a traffic engineer where he worked until 2006, when the firm merged with Wenck. Mr. Terhaar is a licensed professional engineer in MN, WI, ND, and SD.

## **Presentation Overview**

This Rumble Strip Noise Evaluation Study presents results of sound level monitoring of three types of longitudinal rumble strips installed along the edge of two-lane rural roads in Polk County, Minnesota. The study is in response to objections raised by some landowners about the unwanted noise caused by vehicles traveling over rumble strips when they drift over the edge or centerline of the roadway. By changing and modifying the design, the ultimate goal is to provide the maximum safety by capturing the driver's attention through tactile and sound levels while minimizing the associated external noise generated by the rumble strips.

Both exterior and vehicle interior sound levels were measured from three longitudinal edge of pavement rumble strip designs – California, Pennsylvania and Minnesota. Simultaneous digital audio files were also recorded. Three vehicles were used – a passenger car, pickup, and semi-trailer truck. Tests were performed at 30, 45 and 60 mph. Comparison of exterior and interior sound levels and audio shows that the Pennsylvania design is the quietest, both interior and exterior. The interior level of the Minnesota and California designs are similar but exterior levels are higher for the Minnesota design.



*California Design*



## **For More Information**

Visit: <http://www.dot.state.mn.us/trafficeng/topics/index.html>

Or contact: Kelly Kopy, 651-234-7060, [kelly.kopy@state.mn.us](mailto:kelly.kopy@state.mn.us)