

update

News about transportation research and the work of the Minnesota Local Road Research Board

Making a difference.



LRRB Joins National Road Research Alliance



The LRRB recently partnered with the National Road Research Alliance (NRRRA), a new pooled fund focused on solving widespread problems impacting road owners and users. Formed by

MnDOT, the NRRRA will use MnROAD – a premier outdoor pavement test track and road research facility located near Albertville, Minn. – to facilitate local, regional, and national research. As part of the partnership, the NRRRA will help oversee and fund the future construction of new test sections at MnROAD to support common research goals.

While MnDOT has already committed \$2.5 million in construction funding at MnROAD, the LRRB as well as five other state agencies – including the California, Illinois, Michigan, Missouri, and Wisconsin departments of transportation – have also joined the NRRRA to share their expertise and learn about new tools and techniques to improve our national transportation systems. In addition, more than 20 industries and academic institutions have joined the NRRRA to provide critical input on long-term future trends in research and barriers to implementation, including working with their customers and members who play a direct role in implementation.

Each year, the LRRB has access to cutting-edge road research thanks to its participation in MnROAD, one of only two outdoor pavement test tracks of its kind in the country. Now, the LRRB will be able to leverage its contribution even further thanks to the partnerships with other states at MnROAD.

The NRRRA replaces the Transportation Engineering and Road Research Alliance (TERRA), a previously formed group of organizations that shared information. LRRB members currently serving on NRRRA committees include **Lyndon Robjent** (Executive Team), **Jim Grothaus** (Technology Team), **Kaye Bieniek** (Rigid Team), and **John Brunkhorst** (Geotechnical Team).

While several states have participated in individual research projects in the past, NRRRA committee members hope that this unprecedented level of involvement and collaboration at the MnROAD facility will establish a more robust road research and implementation program from which everyone will benefit.

Additional Contacts, Links, and Events:

- Executive Director: Glenn Engstrom at glenn.engstrom@state.mn.us
- NRRRA website: <http://dot.state.mn.us/mnroad/nrra/index.html>
- NRRRA Pavement Conference: **May 18, 2017**

Member Updates

LRRB Updates

- **Kaye Bieniek** (Olmsted County) will replace **Tim Stahl** (Jackson County) as the LRRB and RIC liaison. Kaye will serve on both the LRRB and RIC boards while Tim will serve only on the LRRB board.
- **Paul Johns** (MnDOT Construction) will replace **Tom Ravn** (MnDOT Construction) on the LRRB Board.

RIC Updates

- **Ben Worel** (MnDOT) will replace **Jeff Brunner** (MnDOT) on the RIC board.

Awards

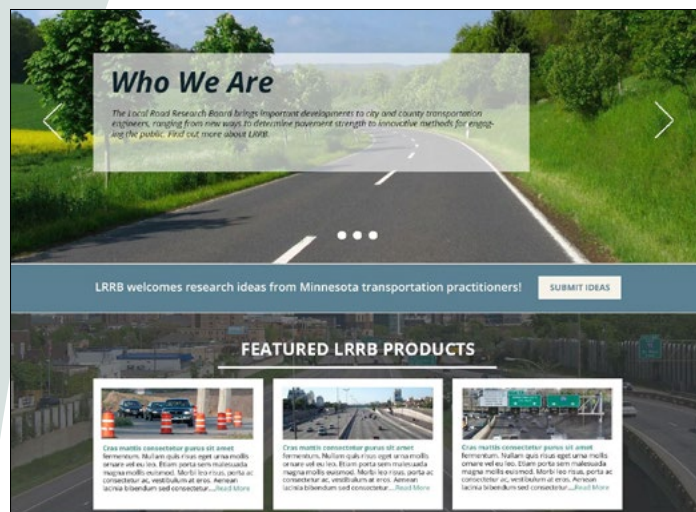
- Congratulations to **Lyndon Robjent** (Carver County) on receiving the Minnesota Transportation Alliance “Transportation Advocate Award.” Each year, the Alliance recognizes the efforts of individuals and organizations that have effectively advocated for a transportation infrastructure improvement within the state of Minnesota. This year, Lyndon was chosen for his strong support and outstanding efforts to improve Minnesota’s transportation system.



Lyndon Robjent receives Transportation Advocate Award

LRRB Launches New Website

The LRRB has redesigned its website, which should be live in **January 2017**. In addition to a modern interface, the new site also contains project videos and blogs. Be sure to check it out at www.lrrb.org!



Highlighted LRRB Projects

Sinusoidal Centerline Rumble Strips (September 2016)

Although rumble strips can be effective tools for reducing crashes, MnDOT has received several complaints from landowners about the exterior noise they produce. A previous MnDOT research project found that sinusoidal (sine-wave-shaped) rumble strips reduced noise outside a vehicle, producing its full sound only when a tire was fully on the rumble strip. The strip tested, however, was narrower than some commercial vehicle tires; this study evaluates several wider sinusoidal centerline rumble strip designs as well as their impacts on bicycles and motorcycles.

While all four tested designs produced similar and satisfactory results, investigators recommended Design 3 (one 14-inch-wide rumble strip, with rumbles 1/16 inch to 1/2 inch deep) as the best option for alerting drivers while minimizing external noise. (It is important to note that motorcyclists found single-rumble designs to be more navigable than those designs with a ridge between two rumbles. Due to scheduling issues, too few bicycle riders were tested to produce conclusive results.)

Using the results of this project and of additional testing to be conducted at MnROAD, a group of state and district traffic engineers, materials engineers, environmental noise experts and State Aid representatives will make a final recommendation. In the meantime, MnDOT has drafted a revised Technical Memorandum to incorporate the recommended rumble strip design. If the draft is approved, the revised memorandum should be published in 2017.

For additional information, please visit:

- [MnDOT Research Page](#)
- [Full Report](#)
- [Technical Summary](#)

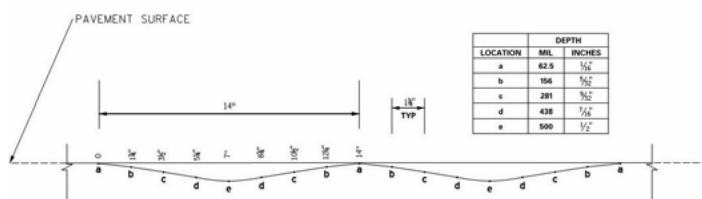


Image and Design Profile of Design 3

Slope Failure Risk Analysis

Slope failures (especially after heavy rain events) block roads, pose safety hazards, and incur preventable maintenance costs along local roadways. While no single stabilization method is appropriate for all situations, there are several possible solutions – such as improving drainage, changing the geometry of the slope, and reinforcing the soil. This study will produce a simple guide to help city and county engineers identify at-risk slopes and suggest appropriate stabilization methods. The project will develop a GIS-based slope failure risk model that could be used to identify areas of low, medium, and high susceptibility to slope failure in a region. The model will be applied to one or two counties in Minnesota; the results will be presented in a map format illustrating areas where slope failure is likely and showing the expected level of risk. The final report is expected to be complete in May 2017. For more information, please visit the [project research page](#).



Additional Announcements

2017 LRRB At-A-Glance Available Online

The FY2017 Local Road Research Board At-A-Glance is now available online at mndot.gov/research/annual-reports.html. In addition to serving as a quick reference guide to our research program, this document highlights the latest RIC products and provides a comprehensive list of tools, handbooks, and software the LRRB has produced over the last year. Please contact [Sandy McCully](#) for printed copies.

We created guidebooks to help local engineers quickly select appropriate work zone layouts for low-volume roads. Report 2016B02C

We developed a tool to help local agencies decide when Flashing Yellow Arrow phasing is appropriate. Report 2016B03C13

We quantified the pavement damage caused by heavy farm equipment.

We validated the use of full-depth reclamation and cold in-place recycling to reduce lifetime costs when reconstructing low-traffic roads. Report 2016-14

FY2016 Local Road Research Board
At-A-Glance
July 1, 2015, through June 30, 2016

LRRB
LOCAL ROAD RESEARCH BOARD