



FY2017 Local Road Research Board

At-A-Glance

ENGAGING STAKEHOLDERS TO
SOLVE PROBLEMS

July 1, 2016, through June 30, 2017

lrrb.org



We developed methodology to select and implement location-specific roundabout safety treatments. [Report 2017-14](#)



We improved multimodal planning by evaluating the traffic impacts of various bike lane and shoulder designs. [Report 2017-23](#)



Using driving simulators, we tested the safety of using smart-phones to deliver messages about work zones. [Report 2017-19](#)



We worked on a one-stop oversize/overweight permitting process for commercial haulers to consolidate jurisdiction requirements. [Report 2017-26](#)

Welcome to the Local Road Research Board At-A-Glance for Fiscal Year 2017

The Local Road Research Board (LRRB) has been bringing innovations to local Minnesota engineers since 1959. The projects listed in this document continue to offer avenues for improving transportation-related processes ranging from high-level policy development to the design, construction and maintenance of pavements, bridges and culverts.

To learn about some of the new resources available to all LRRB members, see pages 4 and 5; for ongoing research updates and other news, visit our new-in-2017 website: lrrb.org.

To ensure that our research is responding to city and county needs, we have implemented a new process for selecting projects involving the following steps:

1. **October prescreening meetings:** LRRB representatives hold sessions at 16 State Aid prescreening meetings, where city and county engineers can discuss their research and technology transfer needs.
2. **January city/county association meetings:** Here we report back on the ideas that were collected in step 1 and prioritized via an LRRB email survey.
3. **February to December proposal development:** We work with you to develop need statements for the top ideas. Then the LRRB issues requests for proposals and selects which proposals to fund.
4. **May prescreening meetings:** We meet again with all city and county engineers at State Aid prescreening meetings to announce which projects are moving forward and share completed research and implementation projects from the past year.



2017 Local Road Research Board: (from left) Jim Foldesi, St. Louis County; Lyndon Robjent (Chair), Carver County; Paul Oehme, City of Chanhassen; Mitch Rasmussen, MnDOT State Aid Division; Kaye Bieniek (2017 liaison between RIC and LRRB), Olmsted County; Ben Worel, MnDOT Office of Materials and Road Research (staff); Tim Stahl (2016 liaison between RIC and LRRB), Jackson County; Laurie McGinnis, University of Minnesota Center for Transportation Studies; Linda Taylor, MnDOT Research Services & Library; Steve Koehler, City of New Ulm; Kevin Western, MnDOT Office of Bridges and Structures. Not pictured: Mitch Bartelt (staff).



2017 LRRB Research Implementation Committee (RIC): (from left) Steve Bot, City of St. Michael; Ted Schoenecker, MnDOT State Aid Division; Guy Kohnhofer, Dodge County; Clayton Eckles, City of Woodbury; Hafiz Munir, MnDOT Research Services & Library; Ben Worel, MnDOT Office of Materials and Road Research (staff); Kelvin Howieson, MnDOT District 3; Joel Ulring, MnDOT State Aid Division (staff); Kaye Bieniek (2017 liaison between RIC and LRRB), Olmsted County; Mike Flaagen (Chair), Pennington County; Jim Grothaus (behind Mike Flaagen), University of Minnesota Center for Transportation Studies; Bruce Holdhusen, MnDOT Research Services & Library (staff). Not pictured: John Brunkhorst, McLeod County.

Your ideas make LRRB research happen. Please do not hesitate to reach out to us with any questions about the new process and LRRB's research and implementation efforts.

Lyndon Robjent

2017 LRRB Chair, Carver County Engineer

Mike Flaagan

2017 RIC Chair, Pennington County Engineer

Mitch Rasmussen

Outreach Subcommittee Chair,
MnDOT State Aid Engineer

Our Mission

The mission of the LRRB is to serve local road practitioners through the development of new initiatives, the acquisition and application of new knowledge, and the exploration and implementation of new technologies.

Join a Technical Advisory Panel

If your idea is selected or you have expertise or interest in a research area, you may be asked to serve on a Technical Advisory Panel (TAP). Participation involves helping guide researchers, attending a limited number of meetings (in person or via video conferencing) and reviewing research results. This puts you in a good position to ensure the research results fit your needs and is applied in the most productive way in the field. To participate on a TAP, contact any board member.

How the LRRB Works

LRRB research ideas come from local Minnesota transportation professionals like you. Bring your research ideas to the October prescreening meeting. You can also submit ideas anytime. Go to lrrb.org and click the **Submit Ideas** button. We will help you identify existing solutions and formulate a need statement to elicit project proposals. In December, the LRRB evaluates all proposals and decides which ones to fund.

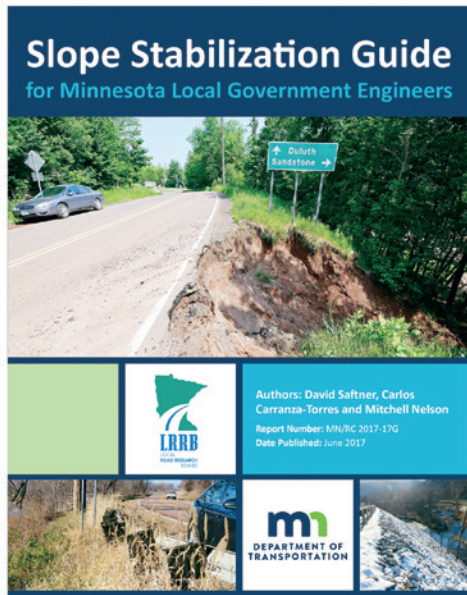


Shakopee Public Works Director Steve Lillehaug, alongside Assistant City Engineer Ryan Halverson (left) and Shoreview City Engineer Tom Wesolowski, shares his research ideas at a Metro District State Aid prescreening meeting. LRRB consultant Nicole Buehne, SRF Consulting Group, Inc. (far right), collects the ideas.



City, county and State Aid staff shared more than 200 needs for research implementation projects at the October 2017 prescreening meetings. The top-ranked ideas will be developed into need statements for possible research, implementation and outreach activities.

New Resources for LRRB Members



◀ Slope Stabilization Guide for Minnesota Local Engineers

A new guide provides information for selecting and implementing simple, cost-effective methods for stabilizing slopes using locally available materials and equipment.

[Report 2017-17G](#)

Design Considerations for Embankment Protection During Road Overtopping Events ▼

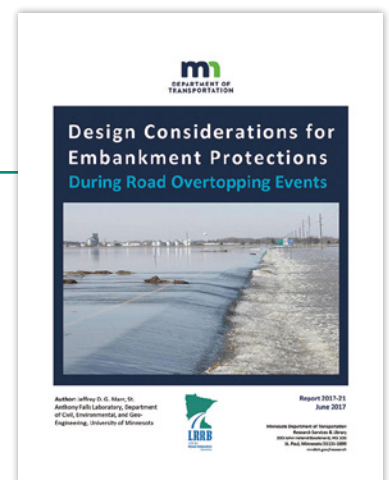
This resource offers a matrix of cost-effective erosion protection measures such as flexible geogrid that your staff can implement to mitigate flooding damage.

[Report 2017-21](#)

Guide and Training: ADA Transition Plan for Public Rights of Way

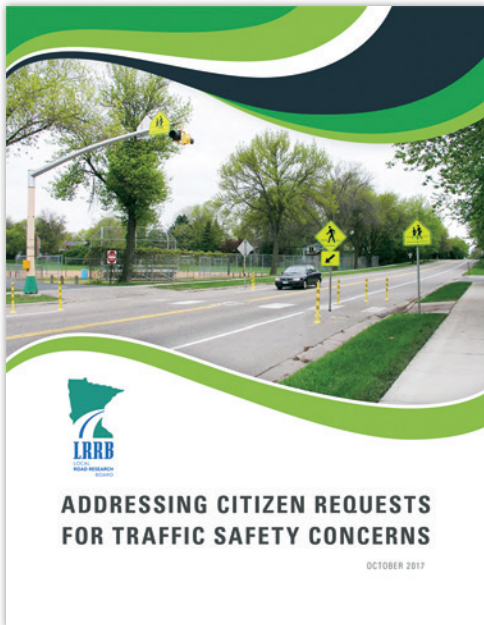
The [Minnesota LTAP](#) is offering three separate training courses that specifically target Americans with Disabilities Act (ADA) transition plan, design and construction requirements. Check out the following report for an interactive guide for developing your transition plan.

[Report 2012RIC01](#)



◀ “Become a Civil Engineer” Website and Video

[Becomeacivilengineer.com](#) provides a video introduction and other resources to encourage kids to explore the world of a civil engineer.



◀ Addressing Citizen Requests for Traffic Safety Concerns

To install a sign or not install a sign, that is the question. The LRRB assembled resources to help city and county engineers respond to traffic safety-related citizen requests.

[Report 2017RIC05](#)

Base Stabilization Additives for Pavement Design

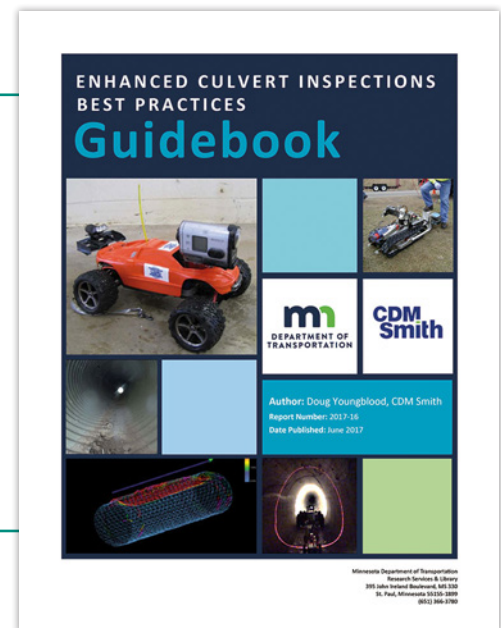
A new guide helps city and county engineers determine the road projects that are good candidates for base stabilization, specific products to use for a given project and best practices for using the products.

[Report 2017RIC02](#)

Enhanced Culvert Inspections ▶ Best Practices Guidebook

Local agencies can use this new guide to determine when to use a conventional versus an enhanced culvert inspection method and provides a list of options, including laser ring scanners, sonar scanners and the Hydraulic Inspection Vehicle Explorer (HIVE), a remote control inspection vehicle recently developed by MnDOT staff.

[Report 2017-16](#)



Alternate Design Methods to Renew Lightly Traveled Paved Roads

Researchers showed that cold in-place recycling and full-depth reclamation with chip seals are often more cost-effective than full pavement reconstruction of rural asphalt roads. Check out the research report for other cost-effective alternatives.

[Report 2016-14](#)

Other resources at lrrb.org:

[Asphalt Patching Techniques](#)

[Systems Preservation Guide](#)

[Intersection Safety Technologies Guidebook](#)

[Traffic Control for Low-Volume Roads](#)

[Flashing Yellow Arrow Decision Tool](#)

[Impacts of Implements of Husbandry on Local Roads](#)

[Synopsis of Recycled Asphalt Pavement Material](#)

[Modernizing Road Construction Plans and Documentation](#)

[Snow and Ice Control Guidebook](#)

[Barriers to Right of Way Acquisition](#)



LRRB Research

Active Projects in FY2017

Projects highlighted on the front cover and pages 4 and 5 are indicated below by **bold text**. For more information about these projects, including a short Technical Summary for completed reports, search at lrrb.org.

COMMON FUNDING SOURCES

LRRB	Local Road Research Board
SP&R	State Planning & Research (FHWA)
SRP	MnDOT State Research Program

Bridges & Structures

LRRB Identifier	Title	Report #/ Status	Investigator	Technical Liaison	End Date	Funding Source	Project Cost
INV 976	Development and Integration of Advanced Timber Bridge Inspection Techniques for NBIS—Purchase Equipment and Train Users	In Progress	Victor Krause, University of Minnesota Duluth	David Conkel, Peter Wilson	2/28/18	LRRB	\$42,794
INV 983	Cost-Competitive Timber Bridge Designs for Long-Term Performance	In Progress	Don Fosnacht, University of Minnesota Duluth	David Conkel	6/30/19	LRRB	\$212,883
INV 1009	Field Investigation of Bridge Deck Reinforced with GFRP Rebar	In Progress	Behrouz Shafei, Iowa State University	Paul Rowekamp	8/31/19	LRRB, SRP	\$88,000
INV 1021	TRS: Local Bridge Removal Policies and Programs	TRS 1702	Patrick Casey, CTC & Associates LLC	Kelvin Howieson	5/31/17	LRRB	\$10,002

Environmental

LRRB Identifier	Title	Report #/ Status	Investigator	Technical Liaison	End Date	Funding Source	Project Cost
INV 965	Study of Deicing Salt Accumulation and Transport Through a Watershed	In Progress	William Herb, University of Minnesota	Wayne Sandberg	12/31/17	LRRB	\$164,043
INV 979	Slope Stabilization Guide for Minnesota Local Government Engineers	2017-17, 2017-17G	David Saftner, University of Minnesota Duluth	Blake Nelson	8/31/17	LRRB	\$78,124
INV 984	Expanding the Success of Salt-Tolerant Roadside Turfgrasses Through Innovation and Education	In Progress	Sam Bauer, University of Minnesota	Dwayne Stenlund	6/30/19	LRRB	\$168,974
INV 1003	NPDES Stormwater Post-Construction Design Guidebook	In Progress	Randy Neprash, Stantec Consulting, Inc.	Michael Flaagan	1/31/18	LRRB	\$89,745
INV 1006	Regional Optimization of Roadside Turfgrass Seed Mixtures	In Progress	Eric Watkins, University of Minnesota	Dwayne Stenlund	8/31/18	LRRB, SRP	\$142,346
INV 1007	Minnesota Culvert Manual to Accommodate Aquatic Species Passage	In Progress	Jeff Marr, University of Minnesota	Petronella DeWall	12/31/18	LRRB, SRP, SP&R	\$164,353
INV 1016	Permeable Pavement for Road Salt Reduction	In Progress	John Gulliver, University of Minnesota	Richard McCoy	8/31/19	LRRB	\$197,835
INV 1017	Iron-Enhanced Swale Ditch Checks for Phosphorus Removal	In Progress	John Gulliver, University of Minnesota	Barbara Loida	8/31/19	LRRB, SRP	\$200,036

TENTATIVELY FUNDED FOR FY2018: Regional Optimization of Roadside Turfgrass Seed Mixtures—Phase II, Design and Construction of Infiltration Facilities, Assessing Culverts in Minnesota: Fish Passage and Storm Vulnerability.

Maintenance Operations

LRRB Identifier	Title	Report #/ Status	Investigator	Technical Liaison	End Date	Funding Source	Project Cost
INV 645	Fleet Management Systems for All Sizes of Local Agencies	2017RIC01	Mike Marti, SRF Consulting Group, Inc.	Guy Kohlnhofer	7/31/19	LRRB	\$26,437
INV 952	Best Management Practices for Establishment of Salt-Tolerant Grasses on Roadsides	2017-31	Eric Watkins, University of Minnesota	Dwayne Stenlund	9/30/17	LRRB	\$193,677
INV 974	Bio-Fog Seal Field Evaluation	In Progress	Eddie Johnson, MnDOT Office of Materials and Road Research	Bruce Hasbargen	6/30/18	LRRB, SRP	\$20,000
INV 974	Evaluation of Bio-Fog Sealants for Pavement Preservation	2016-20	Mihai Marasteanu, University of Minnesota	Eddie Johnson	8/31/16	LRRB, SRP	\$93,969
INV 980	Pothole Prevention and Innovative Repair	In Progress	Mihai Marasteanu, University of Minnesota	Todd Howard	5/31/18	LRRB, SRP	\$129,914
INV 998	Operational Research Program for Local Transportation Groups (OPERA) (FY2017-2018)	In Progress	Jim Grothaus, University of Minnesota—CTS	Mitchell Rasmussen	6/30/18	LRRB	\$160,000
INV 1015	Optimized Taconite-Based Pavement Repair Compound and Deployment System	In Progress	Lawrence Zanko, University of Minnesota Duluth	Perry Collins	2/28/19	LRRB	\$100,000
INV 1018	TRS: Field Usage of Alternative Deicers for Snow and Ice Control	TRS 1706	Laura Fay, Montana State University, Western Transportation Institute	Ryan Peterson	11/30/17	LRRB	\$30,016
INV 1034	Adaptive Management to Improve Deicing Operations	In Progress	Larry Baker, University of Minnesota	Ross Bintner	7/31/20	LRRB	\$204,000

TENTATIVELY FUNDED FOR FY2018: Development of Pavement Condition Forecasting for Web-Based Asset Management for County Governments.

Materials & Construction

LRRB Identifier	Title	Report #/ Status	Investigator	Technical Liaison	End Date	Funding Source	Project Cost
INV 645	Base Stabilization Additives for Pavement Design	2017RIC02	Daniel Wegman, Braun Intertec Corporation, and Renae Kuehl, SRF Consulting Group, Inc.	Ben Worel	7/31/19	LRRB	\$29,476
INV 885	Research Test Section Tracking—Phase II	In Progress	David Van Deusen, MnDOT Office of Materials and Road Research	Luane Tasa	12/31/17	LRRB	\$55,000
INV 935	Design Considerations for Embankment Protection During Road Overtopping Events	2017-21	Jeff Marr, University of Minnesota	John Anderson	8/31/17	LRRB, SRP	\$194,787
INV 967	Full-Depth Reclamation (FDR) for Suburban/Urban and Local Roads Application	2016-37	Mihai Marasteanu, University of Minnesota	Mark Maloney	2/28/17	LRRB	\$93,969
INV 968	Modernizing Road Construction Plans and Documentation	2016-29	Jennifer Shane, Iowa State University	Lyndon Robjert	10/31/16	LRRB	\$146,022
INV 971	Optimal RAP Content for Minnesota Gravel Roads	In Progress	Charles Jahren, Iowa State University	Joel Ulring	8/31/18	LRRB	\$92,538
INV 975	Prevention of Stripping Under Chip Seals	2017-35	Dave Rettner, American Engineering Testing, Inc.	Klayton Eckles	10/31/17	LRRB	\$18,942
INV 981	Evaluation of Stabilized Full-Depth Reclamation (SFDR)	In Progress	Charles Jahren, Iowa State University	Guy Kohlnhofer	4/30/18	LRRB, SRP	\$126,991
INV 985	Life-Cycle Cost Analysis Tool for Minnesota Pavements	In Progress	Derek Tompkins, University of Minnesota	John Brunkhorst	2/28/18	LRRB	\$54,682
INV 986	Performance Monitoring of Olmsted CR 117/104 and Aggregate Base Material Update	In Progress	Kyle Hoegh, MnDOT Office of Materials and Road Research	Kaye Bieniek	6/30/20	LRRB	\$44,000

Materials & Construction [cont.]

LRRB Identifier	Title	Report #/ Status	Investigator	Technical Liaison	End Date	Funding Source	Project Cost
INV 989	Slope Failure Risk Analysis	In Progress	Omid Mohseni, Barr Engineering Company	Paul Stine	11/30/17	LRRB	\$85,000
INV 1001	TRS: Recycled Materials in Unbound Aggregate Base Layers in Minnesota	TRS 1604	W. James Wilde, Minnesota State University, Mankato	Joel Ulring	10/31/16	LRRB	\$14,418
INV 1013	Comparison of Performances of Structural Fibers and Development of a Specification for Using Structural Fibers in Thin Concrete Overlays	In Progress	Manik Barman, University of Minnesota Duluth	Maria Masten	8/31/18	LRRB, SRP, SP&R	\$153,792
INV 1023	Experimental and Computational Investigations of High-Density Asphalt Mixtures	In Progress	Mihai Marasteanu, University of Minnesota	Eddie Johnson	8/31/19	LRRB, SRP	\$150,935
TENTATIVELY FUNDED FOR FY2018: A Guide to Successfully Convert Severely Distressed Paved Roads to Unpaved Roads, Innovative Materials and Advanced Technologies for a Sustainable Pavement Infrastructure.							

Multimodal

LRRB Identifier	Title	Report #/ Status	Investigator	Technical Liaison	End Date	Funding Source	Project Cost
INV 645	HCV Unified Permitting Process—Phase II	In Progress	Annette Theroux, Pro-West & Associates, Inc.	Rich Sanders	8/31/17	LRRB	\$17,548
INV 645	Oversize/Overweight Vehicle Unified Permitting Process—Phase I	2017-26	Mike Marti, SRF Consulting Group, Inc.	Rich Sanders	8/31/17	LRRB	\$50,176
INV 964	Traffic Impacts of Bicycle Facilities	2017-23	Greg Lindsey, University of Minnesota	James Rosenow	7/31/17	LRRB	\$138,914

Policy & Planning

LRRB Identifier	Title	Report #/ Status	Investigator	Technical Liaison	End Date	Funding Source	Project Cost
INV 922	Systems Preservation Guide: A Planning Process for Local Government Management of Transportation Networks—Interactive Presentation	2016-34A, 2016-34B	Lance Bernard, SRF Consulting Group, Inc.	Susan Miller	7/31/16	LRRB	\$708,172
INV 963	Stakeholder Attitudes, Knowledge and Engagement in Local Road Systems Planning and Decision Making	2017-39	Guillermo Narvaez, University of Minnesota	Bruce Hasbargen	9/30/17	LRRB	\$139,793
INV 965	Training Workshop: Americans with Disability Act (ADA) for Local Agencies	In Progress	Mike Marti, SRF Consulting Group, Inc.	Ted Schoenecker	7/31/19	LRRB	\$36,289
INV 969	Barriers to Right of Way Acquisition and Recommendations for Change	2016-28	H. David Jeong, Iowa State University	Patrick Lambert	8/31/16	LRRB	\$133,895
INV 1002	TRS: Consolidated Asset Management for Minnesota Local Agencies	TRS 1603	Patrick Casey, CTC & Associates LLC	Lyndon Robjant	7/31/16	LRRB	\$9,840
INV 1008	Effective Social Media Engagement Options for Minnesota's Diversifying Population	In Progress	Ingrid Schneider, University of Minnesota	Renee Raduenz	4/30/18	LRRB, SRP	\$163,783

Policy & Planning [cont.]

LRRB Identifier	Title	Report #/ Status	Investigator	Technical Liaison	End Date	Funding Source	Project Cost
INV 1014	Transportation Investment and Job Creation in Minnesota Counties	In Progress	Zhirong Jerry Zhao, University of Minnesota	Bruce Hasbargen	3/31/18	LRRB	\$110,350
INV 1020	LRRB Strategic Plan Update	In Progress	Donald Ludlow, CPCS Transcom, Inc.	Lyndon Robjent	9/30/18	LRRB	\$62,734

TENTATIVELY FUNDED FOR FY2018: Evaluating the Impact of Local Expenditures on State and Regional Transportation Facilities, Workforce Planning and Human Resource Development for Minnesota Transportation Public Agencies, Techno-Economic Analysis of Implementing Hybrid Electric Utility Vehicles in Municipal Fleets.

Traffic & Safety

LRRB Identifier	Title	Report #/ Status	Investigator	Technical Liaison	End Date	Funding Source	Project Cost
INV 645	Addressing Citizen Requests for Traffic Safety Concerns	2017RIC05	Renaee Kuehl, SRF Consulting Group, Inc.	Steven Bot	7/31/19	LRRB	\$25,157
INV 924	Ineffective Specialty Signs Video for Local Agencies	In Progress	Bryan Nemeth, Bolton & Menk, Inc. Consulting Engineers & Surveyors	Gary Reihl	8/31/18	LRRB, Other State Funds	\$28,569
INV 943	Traffic Sign Life Expectancy	Completed	Kyle Hoegh, MnDOT Office of Materials and Road Research	Tim Plath	11/30/16	LRRB	\$37,935
INV 948	Flagger Operations: Investigating Their Effectiveness in Capturing Driver Attention	2017-07	Kathleen Harder, University of Minnesota	Robert Vasek	2/28/17	LRRB, SP&R, SRP	\$270,351
INV 962	Evaluation of Safety and Mobility of Two-Lane Roundabouts	2017-30	John Hourdos, University of Minnesota	Joe Gustafson	8/31/17	LRRB	\$124,920
INV 972	Minnesota Local Agency Pavement Marking: Mining Existing Data	2017-43	Omar Smadi, Iowa State University	Kate Miner	10/31/17	LRRB	\$65,000
INV 973	Risk Evaluation for In-Vehicle Sign Information	2016-18	Nichole Morris, University of Minnesota	Victor Lund	7/31/16	LRRB	\$29,365
INV 977	Innovative Technology Workshop on 3-D Lidar	2016-19	Brian Davis, University of Minnesota	Kaye Bieniek	8/31/16	LRRB	\$92,140
INV 978	In-Vehicle Work Zone Messages	2017-19	Nichole Morris, University of Minnesota	Kenneth Johnson	8/31/17	LRRB, SRP	\$105,167
INV 1004	Development and Demonstration of a Cost-Effective In-Vehicle Lane Departure and Advanced Curve Speed Warning System	In Progress	Imran Hayee, University of Minnesota Duluth	Victor Lund	10/31/18	LRRB	\$124,704
INV 1005	In-Vehicle Dynamic Curve Speed Warnings at High-Risk Rural Curves	In Progress	Brian Davis, University of Minnesota	Bradley Estochen	4/30/18	LRRB, SRP, SP&R	\$161,803
INV 1010	Strategies for Effective Roundabout Approach Speed Reduction	2017-14	Susan Chrysler, Texas A&M Transportation Institute	Joe Gustafson	7/31/17	LRRB, SRP	\$74,989
INV 1011	Work Zone Intrusion Report Interface Design	In Progress	Nichole Morris, University of Minnesota	Todd Haglin	4/30/18	LRRB, SRP, SP&R	\$200,638
INV 1012	Investigating the Necessity and Prioritizing Pavement Markings on Low-Volume Roads	In Progress	David Veneziano, Iowa State University	Bruce Hasbargen	2/28/18	LRRB	\$71,475
INV 1030	Examining Optimal Sight Distances at Rural Intersections	In Progress	Nichole Morris, University of Minnesota	Tracey Von Bargen	3/31/19	LRRB	\$170,549

TENTATIVELY FUNDED FOR FY2018: Guidance for Separated/Buffered Bike Lanes with Delineators, Criteria and Guidelines for Three-Lane Road Design and Operation, Design Standards for Unobstructed Sight Lines at Left-Turn Lanes, Quantifying the Impacts of Complete Streets: The Case of Richfield, Development and Demonstration of an In-Vehicle Lane Departure Warning System Using DSRC-Based V2V Communication, Effectiveness of Teenage Driver Support System (TDSS) on Reducing Traffic Violation Behaviors for Teenage Drivers at the Early Time of Licensure.

Administrative

LRRB Identifier	Title	Report #/ Status	Investigator	Technical Liaison	End Date	Funding Source	Project Cost
INV 645	LRRB Outreach and Marketing Support	In Progress	Renae Kuehl, SRF Consulting Group, Inc.	Shannon Fiecke	7/31/17	LRRB	\$20,000
INV 645	LRRB Outreach and Marketing Support (2017-2018)	In Progress	Renae Kuehl, SRF Consulting Group, Inc.	Shannon Fiecke	8/31/18	LRRB	\$83,812
INV 668	FY2017 Local Technical Assistance Program (LTAP)	Completed	Jim Grothaus, University of Minnesota—CTS	Mitchell Rasmussen	6/30/17	LRRB, Other Federal Funds	\$450,500
INV 916	FY2015 LRRB Technical Transfer Materials Development	Completed	Patrick Casey, CTC & Associates LLC	Shannon Fiecke	8/31/16	LRRB	\$99,007
INV 916	LRRB Technology Transfer Material Development (2017)	In Progress	Patrick Casey, CTC & Associates LLC	Shannon Fiecke	7/31/18	LRRB	\$98,942
INV 924	State Aid: Professional Services for Careers in Civil Engineering Video	In Progress	Renae Kuehl, SRF Consulting Group, Inc.	Mitchell Rasmussen	2/28/18	LRRB, Other State Funds	\$82,912
INV 927	LRRB Outreach Website	Completed	John Przybylski, HNTB Corporation	Shannon Fiecke	8/31/16	LRRB	\$64,355
INV 927	LRRB Website Development and Hosting	In Progress	Patrick Casey, CTC & Associates LLC	Shannon Fiecke	7/31/18	LRRB	\$39,419
INV 936	FY2016 and FY2017 LRRB Focus Groups	In Progress	Jim Grothaus, University of Minnesota—CTS	Paul Oehme	7/31/17	LRRB	\$29,382
INV 999	FY2016 RSS Report Publication Services	In Progress	Arlene Mathison, University of Minnesota—CTS	Shannon Fiecke	8/31/17	LRRB, SRP, COPTRS	\$73,035
INV 999	FY2018-2019 Research Services & Library Report Publication Services	In Progress	Arlene Mathison, University of Minnesota—CTS	Shannon Fiecke	6/30/19	LRRB, SRP, COPTRS	\$86,329



Request a Transportation Research Synthesis

A Transportation Research Synthesis (TRS) is a short-turnaround research report that you can request to answer your research question. TRSs can summarize completed and in-progress research, or report about the state of practice among your peers in Minnesota and other states. For more information or to request a TRS, visit mndot.gov/research/TRS.html.

[TRS 1702](#), Local Bridge Removal Policies and Programs, provides the results of a literature review and a survey of state departments of transportation about their policies for removing low-use bridges to reduce ongoing maintenance costs.

2018 LRRB and RIC Meetings

Get up-to-date information on these meetings at lrrb.org.

LRRB Presentations at State Aid Prescreening Meetings: May

LRRB representatives attend all 16 State Aid prescreening meetings across the state to present the results of completed research and share project updates. Research topics include design, environmental compatibility, maintenance, materials and construction, policy and planning, and traffic and operations.

RIC: March 12—MnDOT Fort Snelling Office LRRB: April 5—MnDOT Golden Valley Office

The spring meeting is devoted to programming and strategy identification, with emphasis on identifying research topics for the following year. The LRRB determines ongoing funding commitments, deciding on RIC funding every other year, and approves the next year's travel budget. Information is also provided about projects completed during the past year.

LRRB and RIC: June 20-21—Rochester

Each summer, LRRB and RIC members meet in a joint session to formally adopt the upcoming year's strategic plan. The meeting always takes place outside of the metro area, and when possible, LRRB staff arranges a field tour of a nearby research installation or project site. During the meeting, members use prescreening meeting feedback, themes and gaps identified in Research Road Map efforts and completed research reports to determine research needs for the upcoming RFP and implementation strategies for the RIC. Information is also provided about projects completed during the past year.

RIC: September 12—Location TBD LRRB: October 17—Stearns County Public Works Building, Waite Park

The fall meeting focuses on prioritizing university research proposals to be presented at the LRRB project selection winter meeting. Our fall prescreening meetings held throughout the state provide you with an opportunity to discuss your needs for research and technology transfer.

LRRB Focus Group at State Aid Prescreening Meetings: October

LRRB representatives will again hold sessions at all 16 State Aid prescreening meetings. City and county engineers are encouraged to bring research ideas to discuss with the group. These will be collected for consideration for funding as a research or technology transfer project.

RIC: November 14—Location TBD LRRB: December 12-13—University of Minnesota, Minneapolis

At the winter meeting, the LRRB prioritizes research needs identified throughout the previous year and decides what projects will be funded in the upcoming fiscal year. Research investigators give brief presentations to LRRB members, who can then ask questions about the proposed projects.



(From left) Klayton Eckles, City of Woodbury, Ted Schoenecker, MnDOT State Aid, and Steve Bot, City of St. Michael, share a laugh while reviewing implementation projects during the summer RIC meeting.

Submit Your Ideas

Our research ideas come from local Minnesota transportation practitioners like you. In addition to sharing your needs at a State Aid prescreening meeting, you can submit ideas any time. Visit lrrb.org and click the **Submit Ideas** button. We'll let you know whether current solutions to your problem already exist and help you take your idea to the next stage of consideration for funding.

A World-Class Transportation Library

MnDOT's expert librarians are available to not only MnDOT employees, but also Minnesota city and county engineers. Request a literature search, interlibrary loan or special publication at 651-366-3791, library.dot@state.mn.us or mndot.gov/library.



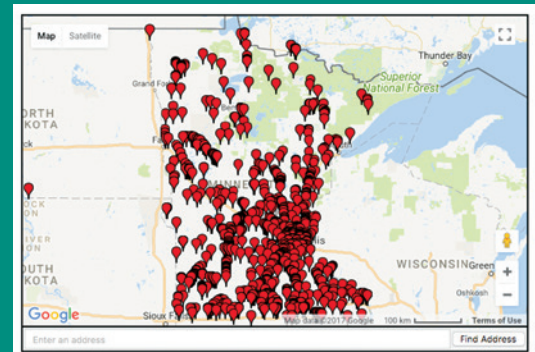
Watch LRRB Videos

The LRRB funds videos that communicate research results to transportation practitioners as well as the public. Check out the [LRRB YouTube channel](http://lrrb.org/resources/videos) or lrrb.org/resources/videos.



The LRRB partners with the National Road Research Alliance, a multi-state pooled fund focused on solving widespread problems impacting road owners and users. Members help direct the research program at the MnROAD pavement testing facility. For more information, see mndot.gov/mnroad/nrra.

New on the LRRB Website: Road Test Section Tracking



Visit lrrb.org and scroll down to use our interactive portal that tracks where new products, designs or construction practices have been installed. Enter your own innovations to share them with others and ensure that lessons learned are remembered.



Operational Research Assistance Program for Local Transportation Groups

Administered by the Minnesota Local Technical Assistance Program, the Operational Research Assistance (OPERA) Program for local transportation groups was established to encourage and fund applied research and assist in developing innovations relating to methods, materials and equipment used in the construction and maintenance operations of local government transportation organizations. The current guidelines for this program are available at mnltp.umn.edu/opera/.