Public Health and Transportation
Innovation, Intervention, and Improvements
The worldwide network of low-volume roads poses challenges in planning, design, construction, operation, and maintenance, and in environmental effects and safety. In recent years, as low-volume roads compete with higher-volume urban roads for funding, these challenges have grown. Nevertheless, low-volume roads constitute the world’s largest road network and their socioeconomic role cannot be overstated. Low-volume roads facilitate economic opportunity; connect rural, developing, and underdeveloped areas; and provide access to education, medical facilities, and markets.

In the early 1970s, the late Eldon J. Yoder of Purdue University initiated TRB activities focusing on low-volume roads; these efforts resulted in the first Low-Volume Roads Conference in 1975. The conference, held every four years, has provided a forum for global information exchange. 

TRB’s 11th International Conference on Low-Volume Roads, in Pittsburgh, Pennsylvania, July 12–15, 2015, was cosponsored by the University of Belgrade, Pontificia Universidad Catolica de Chile, and the University of Pretoria in South Africa. Other sponsors included the Federal Highway Administration, U.S. Department of Transportation (DOT); the Forest Service, U.S. Department of Agriculture; and the Bureau of Indian Affairs and Fish and Wildlife Service, U.S. Department of the Interior. The Center for Dirt and Gravel Roads Studies, Pennsylvania State University, served as local liaison for the event. Eight U.S. state DOTs also provided support through a pooled fund project, initiated by Vanessa Goetz, Iowa DOT.

Two weeks before the conference, Michael T. Long, chair of the planning committee, passed away. Long played a key role in the conference planning and remained involved in committee activities as he was able; the conference was dedicated to him and to his professional contributions to low-volume roads.

Participants came from 25 countries—with at least one attendee from each continent—and presenters from 17 countries shared their research on low-volume roads. Notable details include the following:

- A delegation represented 10 Indian states that have participated in projects of the Ministry of Rural Development, sponsored by the Government of India.
- A delegation from several African countries shared its experiences on projects supported by the Africa Community Access Programme.
- Female professionals accounted for 15 percent of the 268 delegates in attendance.

The conference also offered several workshops, including the following:

- Manage Safety and Risk on Energy-Impacted Local Roads Now or Testify in Court Later;
- Sustainability in Low-Volume Road Infrastructure Projects: Climatic Issues, Resiliency, Carbon Footprint, and Life Cycle Cost Analysis;
- Socioeconomic Issues Related to Low-Volume Roads; and

Participants took a field trip to observe projects conducted by the Center for Dirt and Gravel Roads Studies on environmentally sensitive maintenance of low-volume roads. Also included was a postconference field trip to observe the effects of heavy hauling related to unconventional gas extraction on public low-volume roads.

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More than a dozen exhibitors showcased their products and services at the conference. Hernan Eduardo de Solminihac of Pontificia Universidad Catolica de Chile delivered the keynote address, "Toward Sustainable Management of Low-Volume Roads in Chile: Improvements and Challenges." The Yoder Award for best paper was presented to Paul J. Carlson of Texas A&M Transportation Institute for his paper, "Can Traffic Signs Be Too Bright on Low-Volume Roads?"

The 12th International Conference on Low-Volume Roads will be held in 2019. The date and location will be announced in the TRB E-Newsletter in 2016.

A panel of representatives from the Iowa, New York, Ohio, Virginia, Louisiana, Illinois, Wyoming, and Pennsylvania Departments of Transportation provides an overview of the management and financing of their states' low-volume roads.

Proposed Modifications to Culvert Load Rating Specifications

When load limits are imposed on routes that previously were unrestricted, the choice of a load rating method may affect highway goods movement. For culvert load ratings, engineers use the load and resistance factor rating (LRFR), load factor rating, or allowable stress rating of highway bridges according to the American Association of State Highway and Transportation Officials' (AASHTO's) Manual for Bridge Evaluation.

Culvert response to live loads differs from that of bridges, however. Although culvert response should be calibrated based on a single axle or wheel, LRFR generally is calibrated based on bridge response to gross truck weight. As a result, current specifications may be overly conservative or inadequate.

Michael Baker, Jr., Inc., has received a $500,000, 36-month contract (CHRP Project 15-54, FY 2015) to propose modifications to the culvert load rating specifications in the AASHTO Manual for Bridge Evaluation and to revise the AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications accordingly.

For more, contact Waseem Dekelbab, TRB, 202-334-1409, wdekelbab@nas.edu.

Proposed Seismic Specifications for Bridge Column Connections

According to the report from NCHRP Domestic Scan 11-02, Best Practices Regarding Performance of ABC Connections in Bridges Subjected to Multihazard and Extreme Events, accelerated bridge construction (ABC) techniques have been limited in moderate-to-high seismic regions. The AASHTO Guide Specifications for LRFD Seismic Bridge Design prohibits or limits connections that splice longitudinal column reinforcement in plastic hinge regions.

The University of Nevada, Reno, has received a $450,000, 40-month contract (NCHRP Project 12-105, FY 2015) to develop proposed AASHTO displacement-based design and construction specifications for the implementation of ABC column connections in moderate to high seismic regions.

For more, contact Waseem Dekelbab, TRB, 202-334-1409, wdekelbab@nas.edu.

THINKING LONG TERM—
Mark McConnell, Mississippi Department of Transportation (back row, second from right) and Sue McNeil, University of Delaware (front row, center), led a meeting of the AASHTO Highway Subcommittee on Maintenance, July 9-10 at the Beckman Center in Irvine, California. With Amir Hanna, TRB (front row, third from right), members reviewed and updated the subcommittee's strategic plan.