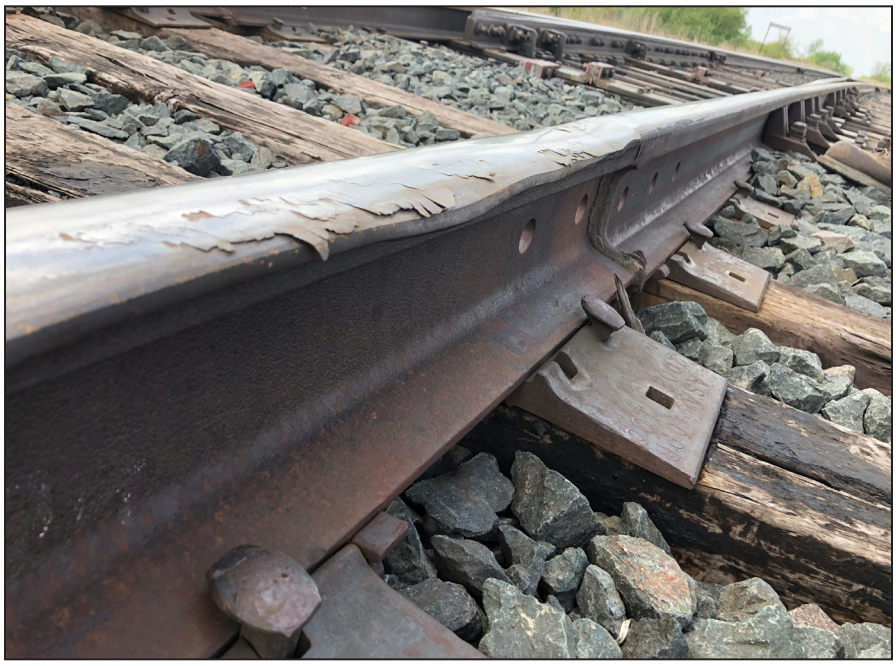
MOUNTAIN-PLAINS CONSORTIUM

RESEARCH BRIEF | MPC 18-365 (project 357) | September 2018

Railroad Investment in Track Infrastructure



the **ISSUE**

Investments in basic track components are necessary to (1) provide safe transportation of passengers and goods, (2) maintain infrastructure in a state of good repair, (3) add capacity, (4) reduce congestion, and (5) increase the overall efficiency of operations. Track investments are important from a regulatory perspective, as railroad revenues must recoup operating expenses and allow companies to earn an adequate return on invested capital. The Surface Transportation Board (STB) utilizes the Uniform Railroad Costing System (URCS) to provide information about railroad costs. A return of 50% on roadway investment is reflected in the URCS variable cost. This long-standing assumption (that half of road capital investments are fixed) is based on traffic patterns and practices prior to 1955. Since then there have been many changes, including deregulation, changes in regulatory practices and a dramatic increase in car weights. Consequently, a current analysis of railroad investment practices is needed.

the **RESEARCH**

The objectives of this study are to describe patterns of track investment in the United States and show how track investments vary with network size, traffic, and other factors. A non-linear log model of investment in basic track components is estimated from 1985-2008 data for Class I railroads. Network size is measured in miles of road (MOR), while traffic is measured in revenue gross ton-miles (RGTM). In addition to MOR and RGTM, the model includes railroad indicator and time variables.

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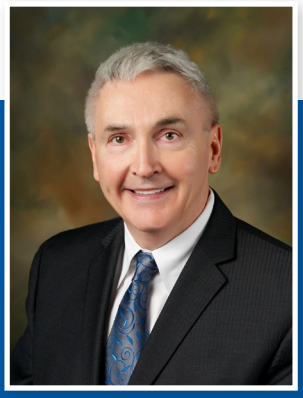

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Project Title

Quantifying Sustainability Metrics for Trunk Line Bridges in the Mountain Plains Region

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the **FINDINGS**

The study indicates that when miles of road are held constant (a very realistic scenario), the increase in track investment is roughly 50%—that is, for a 100% increase in RGTM, track investment is expected to increase by 50%. However, this is not a completely satisfactory answer. The elasticity of investment with respect to time is 18%. This could (at least in part) reflect the upgrading of tracks to handle heavier axle loads.

the **IMPACT**

This research summarizes track cost factors to assistor planning and comparing the maintenance costs of various kinds of track. The long-standing ad-hoc factor assumption (that half of road capital investments are fixed) is based on traffic patterns and practices prior to 1955. Many changes have occurred since then. The study will provide up-to-date reference of track cost factors that will be useful for planning, policy making, and regulatory activities.

For more information on this project, download the entire report at http://www.ugpti.org/resources/reports/details.php?id=921

For more information or additional copies, visit the Web site at www.mountain-plains.org, call (701) 231-7767 or write to Mountain-Plains Consortium, Upper Great Plains Transportation Institute, North Dakota State University, Dept. 2880, PO Box 6050, Fargo, ND 58108-6050.

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