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Project Title

Effectiveness of Mitigation
Methods and Signage in
Reducing Railway Trespassing
Events

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the FINDINGS

The results reveal that action-conveying signs (such as “Stop Railroad Crossing” or “Do Not Cross”) and emotionally motivated signs are generally more effective in discouraging pedestrian crossings in high-risk situations compared with information-only signs. Action-conveying signs were found to be particularly impactful when a train was present, while emotionally motivated signs elicited stronger responses when warning lights were flashing or gates were down. The MaxDiff analysis of sign design effectiveness highlighted that black symbols on yellow backgrounds were perceived as the most effective in conveying safety information, while signs with black on white or red on white backgrounds were rated less favorably. The study further found that square-shaped signs were slightly more effective than circular ones.

the IMPACT

This study provides insights into the effectiveness of various sign messaging strategies and designs at pedestrian-railroad crossings. The findings emphasize the importance of using action-conveying and emotionally motivated signs to enhance pedestrian safety and decision-making. By considering the specific needs of high-risk populations, such as younger individuals and males, targeted interventions can be developed to address the unique challenges they face when navigating railroad rights-of-way.

Implications of this research for policy and practice include revising signage guidelines to prioritize the use of action-conveying and emotionally motivated signs, allocating resources for targeted education and awareness campaigns, conducting comprehensive safety assessments, monitoring and evaluating interventions, and encouraging cross-sector collaboration. By integrating these evidence-based strategies into policy and practice, transportation authorities, policymakers, and local communities can work together to improve safety at pedestrian-railroad crossings and reduce the incidence of accidents and fatalities.

For more information on this project, download the Main report at <https://www.ugpti.org/resources/reports/details.php?id=1233>

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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