

MOUNTAIN-PLAINS CONSORTIUM

RESEARCH BRIEF | MPC 24-525 (project 622) | June 2024

Utilizing Traffic Signal
Pedestrian Push-Button
Data for Pedestrian
Planning and Safety
Analysis



the **ISSUE**

Transportation planning, traffic monitoring, and traffic safety analysis require detailed information about pedestrian volumes, but such data are usually lacking.

the **RESEARCH**

This project takes advantage of novel pedestrian push-button traffic signal data to advance pedestrian traffic monitoring and improve pedestrian traffic safety. The data are applied as estimates of volume and exposure, often alongside advanced machine learning techniques.



A University Transportation Center sponsored by the U.S. Department of Transportation serving the Mountain-Plains Region. Consortium members:

Colorado State University
North Dakota State University
South Dakota State University

University of Colorado Denver
University of Denver
University of Utah

Utah State University
University of Wyoming



Lead Investigator(s)

Patrick Singleton
patrick.singleton@usu.edu

Co-Investigator(s)

Michelle Mekker
michelle.mekker@usu.edu

Research Assistant(s)

Amir Rafe, GRA
Prasanna Humagain, GRA
Ferdousy Runa, GRA
Ahadul Islam, GRA

Project Title

Utilizing Traffic Signal
Pedestrian Push-Button Data
for Planning and Safety
Analysis

Sponsors | Partners

Utah DOT
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Innovative Technology
Administration

the FINDINGS

Through a series of five studies, this research identified temporal patterns in pedestrian activity; studied the accuracy of pedestrian volume estimation methods over time; used machine learning methods to improve the quality and completeness of pedestrian time-series data; analyzed crashes to identify a “safety in numbers” effect for pedestrians; and applied a new deep learning model to better understand factors affecting pedestrian crash severity.

the IMPACT

This research opens up the possibility of improving pedestrian traffic monitoring and safety in other states (beyond Utah) by applying pedestrian traffic signal data to the analysis of these issues.

For more information on this project, download the Main report at <https://www.ugpti.org/resources/reports/details.php?id=1168>

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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