



Lead Investigator(s)

Xianfeng Yang
x.yang@utah.edu

Research Assistant(s)

Bahar Azin, GRA, PhD
Qinzheng Wang, GRA, PhD

Project Title

Impact of Connected Vehicle
Technology on Traffic Safety
under Different Highway
Geometric

Sponsors | Partners

Utah DOT

USDOT, Research and
Innovative Technology
Administration

the FINDINGS

Results indicate that CAVs' presence in traffic flow can elevate safety performance, especially on freeways. Signalized intersections do not show an improvement in traffic safety because of the limited information available on the interaction of conventional vehicles and CAVs. Also, potential CAV safety features might not be fully applicable in controlled roadways. However, the reduced number of rear-end and lane-changing conflicts shows that CAVs successfully reduce crash rates. In addition, potential crash results demonstrate that because of smaller speed variances and reduced decelerations, crashes will be less severe. Safety performance evaluations show that safety improvements resulting from increased use of CAVs will be significant.

the IMPACT

This research shows the safety benefits of CAVs under various driving conditions and provides insight into how road geometric designs can affect CAV safety performance. The research also shows that the CAV penetration rate plays a key role in affecting road safety as well. The research will help roadway designers and transportation system designers adapt roadway systems to the emergence of CAVs.

For more information on this project, download the main report at <https://www.ugpti.org/resources/reports/details.php?id=1103>

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.



This publication was produced by the Mountain-Plains Consortium at North Dakota State University. The contents of this brief reflect the views of the authors, who are responsible for facts and the accuracy of the information presented herein. This document is disseminated under the program management of the USDOT, Office of Research and Innovative Technology Administration in the interest of information exchange. The U.S. Government assumes no liability for the contents or use thereof.



NDSU does not discriminate in its programs and activities on the basis of age, color, gender expression/identity, genetic information, marital status, national origin, participation in lawful off-campus activity, physical or mental disability, pregnancy, public assistance status, race, religion, sex, sexual orientation, spousal relationship to current employee, or veteran status, as applicable. Direct inquiries to Vice Provost, Title IX/ADA Coordinator, Old Main 201, 701-231-7708, ndsuoaa@ndsu.edu.