

MOUNTAIN-PLAINS CONSORTIUM

RESEARCH BRIEF | MPC 24-516 (project 603) | March 2024

Investigating Bicyclist Safety Perceptions and Behaviors at Roundabouts



the **ISSUE**

As roundabouts become increasingly popular, and as many communities promote bicycle use, a major concern is the safety of roundabouts for bicyclists.

the **RESEARCH**

In this project, researchers studied bicyclists' safety perceptions of and preferences for roundabouts with different characteristics. First, the researchers performed a systematic literature review on bicycle safety at roundabouts, reviewing 49 different resources with empirical findings. Next, they developed a 20-minute online questionnaire to collect data from up to 613 U.S. adult bicyclists. The survey presented respondents with hypothetical roundabouts with various controlled design and operational attributes, represented using text and simulated images. The researchers then analyzed cyclist preferences from a discrete choice experiment and bicyclists' perceptions of comfort.



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Project Title

Investigating Bicyclist Safety
Perceptions and Behaviors at
Roundabouts

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the FINDINGS

The researchers found that, overall, U.S. bicyclists prefer roundabouts with smaller central islands, fewer travel lanes, lower traffic volumes, lower speed limits, and separated bicycle lanes. The most comfortable roundabouts for bicycling had many of these same characteristics. Notably, women and “interested but concerned” cyclists had stronger preferences for separated bicycle lanes.

the IMPACT

The researchers suggest updating U.S. roundabout design guidelines to include “protected roundabouts” that allow for separated bicycle lanes and result in safer and more comfortable roundabouts. Considering bicycle preferences and perceived comfort at roundabouts will encourage cycling for people of all ages and abilities.

For more information on this project, download the Main report at <https://www.ugpti.org/resources/reports/details.php?id=1156>

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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