THE UNIVERSITY OF NORTH CAROLINA
HIGHWAY SAFETY RESEARCH CENTER
DIRECTIONS
spring 05

Exploring accessibility at modern roundabouts

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HSRC explores accessibility issues at modern roundabouts

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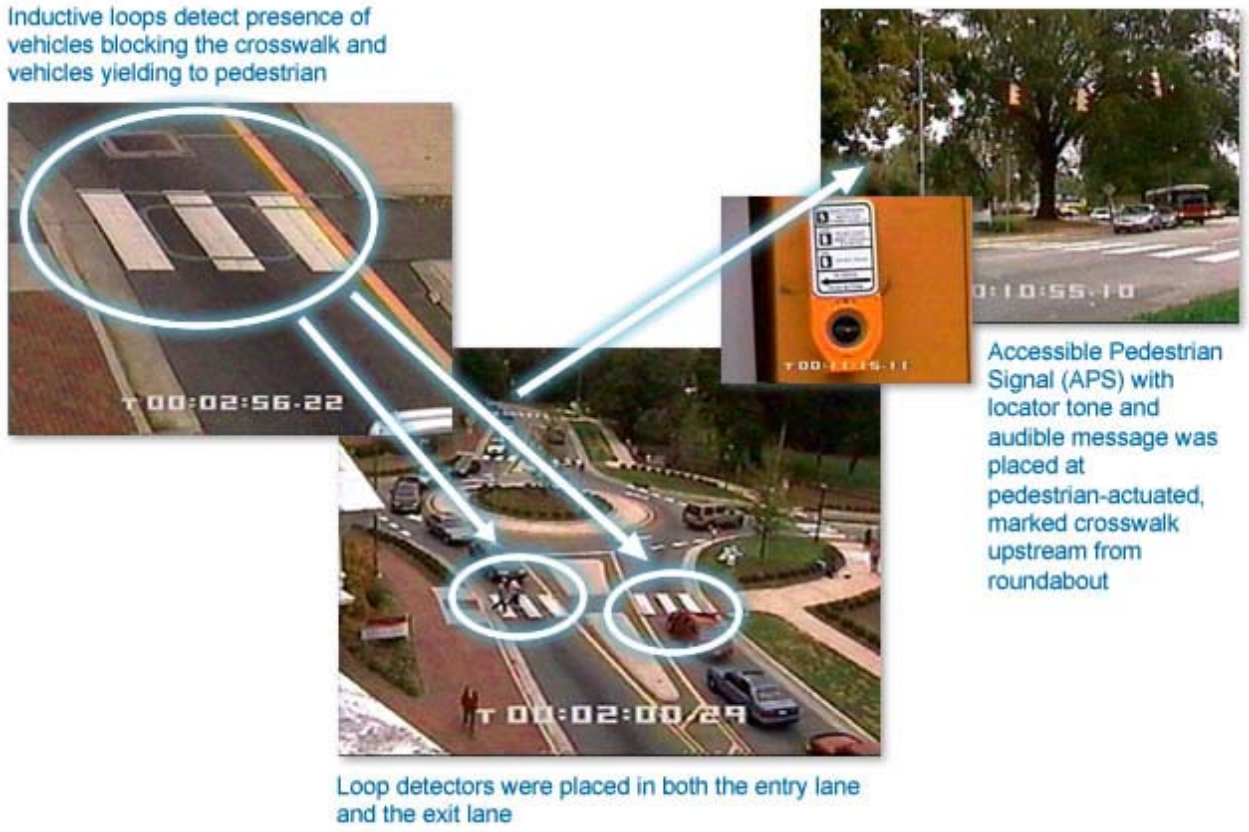
When properly designed, roundabouts offer a safer alternative to the traditional intersection, resulting in fewer serious vehicle crashes. Yet, despite their recognized safety benefits with regards to vehicles, roundabouts offer potential hazards for blind pedestrians. The Highway Safety Research Center at UNC is currently conducting research aimed to improve the accessibility of blind pedestrians crossing at modern roundabouts.

Research conducted in this area to date has shown that blind pedestrians require longer gaps in traffic than sighted pedestrians when attempting to cross roundabouts and in many instances are more likely to take risky gaps – gaps too short to complete the crossing before an approaching vehicle arrives at the crosswalk. The research has also shown that this problem is worse at the exit lane of a roundabout and is aggravated by drivers who fail to yield to pedestrians. Even when drivers yield to a blind pedestrian, the pedestrian is often unable to detect the presence of the vehicle that is yielding, a problem that is expected to increase with the introduction of “quiet” cars.

To address this problem, HSRC has begun testing the effectiveness of a prototype yield detection device – a device that would allow blind pedestrians to audibly detect when a car is either blocking the crosswalk or yielding in advance of the crosswalk, therefore allowing them to more safely cross the intersection. The research team has just completed preliminary data collection at the Pullen-Stinson roundabout (see below) on the NC State University campus in Raleigh, NC.



The research study, sponsored by the Eye Institute of the National Institutes of Health, is being conducted in conjunction with Western Michigan University, Vanderbilt University, Johns Hopkins University and NC State University's Institute for Transportation Research and Education.

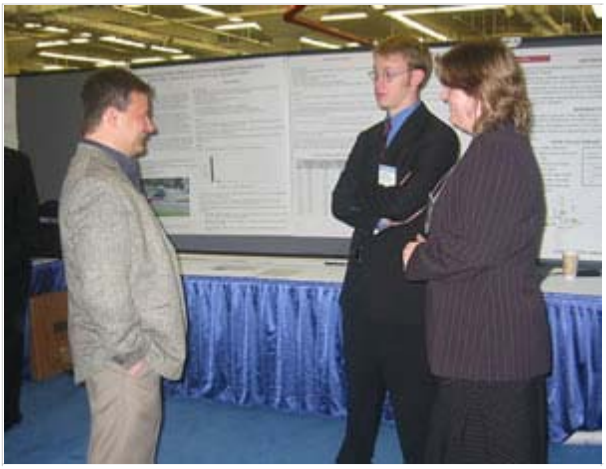
HSRC has also just initiated a National Cooperative Highway Safety Research Project 3-78 to more extensively evaluate accessibility for blind pedestrians at modern roundabouts and explore potential countermeasures. The HSRC-led team will also address problems associated with pedestrian access at channelized turn lanes.

HSRC researchers participate in international transportation conference

HSRC researchers and staff gathered with members of the transportation community from across the globe for the 84th Annual Meeting of the Transportation Research Board (TRB) in Washington, DC on January 9-13.

The following researchers from the Center presented during the conference on a wide variety of safety-related topics:

- Engineering Research Associate Daniel Carter presented "Operational and Safety Effects of U-Turns at Signalized Intersections" during a poster session entitled *Issues in Geometric Design and Effects of Design on Operations*.
- "A Multi-Jurisdictional Safety Evaluation of Red Light Cameras" and "Guidance for Implementing Red Light Camera Programs Based on an Economic Analysis of Safety Benefits," two papers co-authored by Senior Research Scientist Forrest Council, were presented by Mike Griffin of the Federal Highway Administration during the *Roundabout Research and Implementation* session.
- Research Associate Arthur Goodwin presented "Reducing College Student Drinking and Driving with Social Norm Intervention" during a session entitled *Young Drinking Drivers: Who Are They and How Can We Influence Them?*



Engineering Research Associate Daniel Carter discusses his research with Dr. Joseph Hummer, professor at North Carolina State University, and Stacie Phillips, traffic analyst with Kimley-Horn and Associates.

- David Harkey, HSRC deputy director, presented "Data Needs: Getting Ready to Use the Highway Safety Manual" during the *Need Data—How Do You Get It?* session.
- Senior Research Psychologist Ronald Hughes presented the "Overview of Planned Approach" for the National Cooperative Highway Research Program's project 3-78, "Crossing Solutions at Roundabouts and Channelized Turn Lanes for Pedestrians with Vision Disabilities."

TRB is a division of the National Research Council that works to promote innovation and progress in all modes and aspects of transportation. The annual meeting included approximately 9,000 transportation professionals from around the world and more than 2,500 presentations covering all modes of transportation.

PEDSAFE offers interactive tools, real-world examples to diagnose pedestrian-related issues

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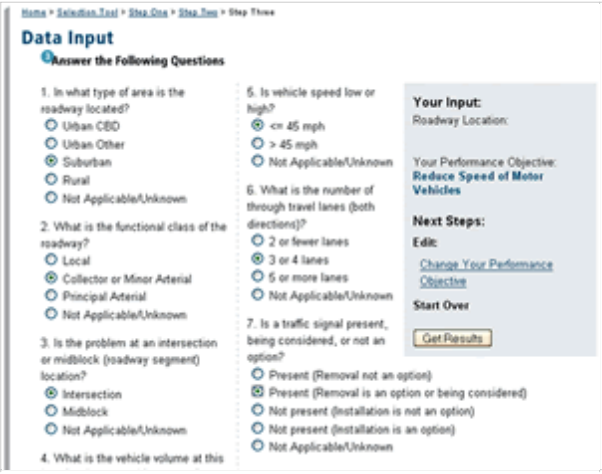
Transportation planners and practitioners have a new diagnostic tool to add to their pedestrian safety toolbox. The Pedestrian Safety Guide and Countermeasure Selection System, or PEDSAFE, enables practitioners to effectively select and review engineering, education and enforcement treatments to either alleviate an identified crash problem or change undesired motorists and/or pedestrian behaviors.



This online, interactive system allows the user to “diagnose” a pedestrian-related issue based on site characteristics, such as geometric features and operating conditions, the type of safety problem, or desired behavioral change. The system then utilizes these characteristics to formulate potential solutions to improve conditions for pedestrians within the public right-of-way. The potential countermeasures are supplemented with over 70 case studies, offering users various real-world solutions implemented around the globe.

Developed by HSRC and funded by the Federal Highway Administration, PEDSAFE is intended primarily for engineers, planners, safety professionals and decision makers, but it may also be used by citizens for identifying problems and recommending solutions for their communities. In addition to the interactive tools, PEDSAFE includes basic pedestrian crash trends and statistics, recommended guidelines for the installation of sidewalks and crosswalks as well as a complete bibliography of guides, handbooks and useful Web sites.

PEDSAFE is available online at http://www.walkinginfo.org/pedsafe. A print version of the guide is also available and includes the system on an enclosed CD-ROM. To order a print version, please visit http://safety.fhwa.dot.gov/ped_bike/ped_bike_order.htm.

HSRC, UNC continue quest for on-campus transportation safety

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Student volunteers, public safety officials and HSRC staff gathered at several crosswalks throughout the campus of the University of North Carolina at Chapel Hill in the fall to recognize Yield to Heels Day. Over 4,500 educational brochures and 700 t-shirts were distributed to UNC students, faculty and staff as well as visitors to the campus. The message to pedestrians, bicyclists and drivers: Be Aware, Be Considerate, Be Safe.

"While the total number of pedestrian deaths in the United States has decreased dramatically in the past 20 years, they still account for 11 percent of motor vehicle deaths," said Doug Robertson, director of the Highway Safety Research Center at UNC. "Our goal is to give pedestrians, bicyclists and drivers the information to make safe decisions when traveling both on and off campus."

Since the year 2000, more than 590 citations have been issued to motorists for failure to yield to pedestrians in marked crosswalks, and 894 speeding citations (mainly in areas with a high volume of pedestrians) have been written. The UNC Department of Public Safety has also conducted over 389 pedestrian safety awareness programs in residence halls, fraternities and sororities, and other campus groups.

HSRC News Briefs

HSRC researcher presents paper at ICADTS in Scotland

HSRC Senior Research Associate Arthur Goodwin presented a research paper entitled “A Social Norms Approach to Reduce Drinking-Driving Among University Students” at the 2004 International Council on Alcohol, Drugs and Traffic Safety (ICADTS) Triennial Meeting in Glasgow, Scotland.

The paper summarized findings from a groundbreaking, on-campus alcohol study conducted by Center researchers. In 1997, with strong support from university officials, HSRC began a first-of-its-kind study of drinking among UNC students by taking voluntary, anonymous breath-alcohol measurements as students returned to their residences in the late evening (10 p.m. to 3 a.m.) on all nights of the week. They found that on traditional “party” nights – Thursday, Friday and Saturday – two out of three students returned home with a zero blood alcohol concentration (BAC).

Based on this research, a comprehensive social norms campaign, dubbed the “2 out of 3” program, was launched in the summer of 1999. Social norms programs are designed to correct misperceptions about drinking by presenting accurate information about student alcohol use. The ”2 out of 3” campaign was sustained for four years and included interactive presentations at first-year student orientation sessions, posters, newspaper ads, curriculum infusion, and a web site. Additional surveys were conducted in the fall of 1999 and 2002 to assess short- and long-term effects of the campaign. Overall, 6,300 undergraduate UNC students were interviewed during the study.

The results showed an 11 percent decrease in drinking among surveyed drivers. The average BAC of drivers who had been drinking decreased from .043 to .022. In addition, among drivers who had been drinking, the percent who registered a zero BAC increased from 16 percent to 46 percent. That is, though they had been drinking it was so little that it was out of their system when they drove. Those drivers registering a BAC over .05 decreased from 40 percent in 1997 to 16 percent in 2002.

ICADTS is “an independent nonprofit organization aimed at reducing mortality and morbidity brought about by misuse of alcohol and drugs by operators of vehicles in all modes of transportation.”

HSRC director serves as co-chair of TRB subcommittee on School Transportation

The Transportation Research Board (TRB) has formed a new subcommittee on school transportation to address issues impacting the safety, security, health and quality of school travel. The Center’s director, Dr. Doug Robertson, will serve as co-chair of the subcommittee along with Jeff Tsai, director of the Pupil Transportation Group at the Institute for Transportation Research and Education. The subcommittee meets annually at the TRB Annual Meeting held in Washington , D.C.

2004 International Walk to School

On Wednesday, October 6, 2004 , students, parents, and community leaders across the United States and around the globe celebrated a simple but all too rare act – the walk to school. Celebrating eight years of promoting walking, International Walk to School Day brought together more than 3 million people from 36 countries around the world.

The idea is to walk to school together with a purpose – to promote health, safety, physical activity and concern for the environment. Walk to School Day brings together community coalitions that push for safety improvements for pedestrians, increased physical activity and local government policy changes. Established in the United States in 1997 by the Partnership for a Walkable America, the event was expanded in 2003 to International Walk to School Week, offering schools around the world the opportunity to increase their efforts, such as incorporating safety programs into classroom curriculum and hosting safety-themed events.

To learn more about Walk to School Day, visit www.walktoschool.org. The Web site includes resources such as health information, details on events across the United States and a downloadable checklist to assess the walkability of a community. More information about the Partnership for a Walkable America and access to an interactive version of the checklist is available through www.walkableamerica.org.

AAAM presents Best Scientific Paper Award to HSRC researchers

Dr. Jane Stutts, HSRC's associate director for social and behavior research, accepted the Best Scientific Paper Award from the Association for the Advancement of Automotive Medicine (AAAM) during the organization's 48th annual meeting.

The award was given for "Causes and Consequences of Distraction in Everyday Driving," a paper based on research funded by the AAA Foundation for Traffic Safety. Paper authors were Jane Stutts, John Feaganes, Eric Rodgman, Charles Hamlett and Donald Reinfurt of HSRC and Kenneth Gish, Michael Mercadante, and Loren Staplin of TransAnalytics. The paper was published in the 47th Annual Conference Proceedings.

According to AAAM, the award recognizes "high-quality research in new and sometimes controversial areas."