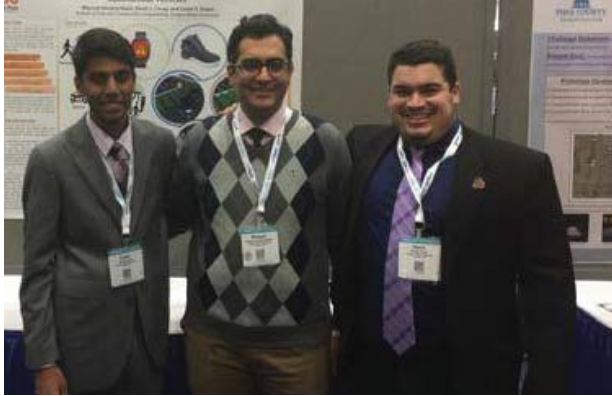


2018

Traffic Control Device Challenge



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2018 Traffic Control Device Challenge

OVERVIEW

The objective of the Traffic Control Device Challenge (TCDC) is to promote innovation and stimulate ideas in the traffic control devices area with a goal to improve operations and safety. The challenge is sponsored by and conducted cooperatively by the Transportation Research Board Standing Committee on Traffic Control Devices (AHB50) and the American Traffic Safety Services Association (ATSSA).

GUIDELINES FOR PARTICIPATION

The TCDC is open to individual high school, junior college, college, or university students or teams of students with an interest in transportation and an understanding of traffic control devices. Students in relevant fields such as transportation-, human factors-, and graphic design-related curricula are particularly encouraged to participate.

The TCDC submittals will help to encourage innovation and creative thought in the transportation community. Contest participants will receive the opportunity to vet their designs in a public forum. Three winning teams will receive recognition at a national transportation forum.

PROBLEM STATEMENT

Wrong-way driving can be described as a situation when a vehicle enters a traffic stream travelling in the opposite direction and drives against the on-coming vehicles. These events continue until the operator realizes he or she is in error, leaves the roadway, redirects her or his vehicle to the proper direction, or causes a collision. This behavior results in 300 to 400 highway fatalities every year (safety.fhwa.dot.gov/intersection/other_topics/wwd). While relatively small in number, these fatalities (and other injury-related accidents) are often spectacular in nature and leave survivors with many questions regarding why this type of situation could occur.

As most of the drivers who engage in this behavior do it unintentionally (impaired drivers are an issue here, too), there is often a failure on their part to recognize that the roadway or ramp they are entering is carrying traffic coming in the opposite direction. A lack of sensing, perceiving, or recognizing that their intended vehicle path is the “wrong one” would lead one to think that this is a problem that could be solved through enhancements to driver wayfinding systems or elements. However, technology that detects and alerts the driver, transportation agencies, and other drivers is also needed.

While the development of programs, and specific countermeasures, has been resolute, the problem persists claiming the same number of lives, year in and year out. Therefore, designers or design teams will have to consider how the current system needs to change to prevent this behavior and attendant crashes. What are the traffic control device designs, ideas, enhancements, and/or standards that will stop motorists from entering the wrong roadway and driving the wrong way? How will technology compliment these traffic control device strategies? That is the challenge for you and your teammates.

GUIDELINES FOR PARTICIPATION

Contest Eligibility

Submitter Eligibility

The TCDC is open to individual high school, junior college, college, or university students or teams of students. All that is required of submitters is a keen interest in transportation and an understanding of traffic control devices.

If selected as a finalist, submitters need to plan on being at the TRB Annual Meeting, which will be held January 7 through 11 in Washington, D.C. (or have a representative there). The judging for the top three submissions will take place during the TRB Annual Meeting. The first, second and third place winners will be expected to attend the ATSSA Convention and Traffic Expo, January 26 to 30, in San Antonio, Texas. ATSSA will provide financial support for travel to this event.

Originality of Design

The submissions must be an original design of the designer(s) or modifications to an existing industry-accepted design or product. In the case of a modification to an existing TCD, the original TCD that is being modified should be acknowledged.

Individuals or Teams

Individuals or teams can participate. Each individual or team submittal should have a lead contact specified by name and affiliation.

Multiple Submittals

Multiple submissions are allowed by individuals or by teams. Each submission will be considered independently and, as such, should be submitted in a separate submission package.

Competition Scheduling

The following table presents key dates for submitting and participating in the TCDC.

Milestone	Date
Announcement of TCDC	May 1, 2017
Submission Deadline	October 1, 2017
Review of Submissions for Eligibility	October 15, 2017
Notification of 12 Teams Invited to Display Their Work	November 1, 2017
Display of Eligible Submissions and Judging	Sometime during the TRB Annual Meeting, January 7 to 11, 2018
Announcement and Recognition of Winners	January (at TRB) and January 27 to 30, 2018 (at ATSSA)

Submittal Specifications

The submission packet can include drawings, photographs, or other graphical renderings that can be encapsulated in a PDF file. Submittals are limited to five pages in length, including all text and graphics, packaged in a PDF format. Submitters are encouraged to provide a narrative in the five pages that explains the traffic control device or system of devices and describe how the submittal addresses each of the review criteria as specified below. The submitter should strive to communicate in a succinct manner.

Each TCDC submittal must also include a signed submission form (not included in the submittal page total), included as Attachment 1 to this guide.

REVIEW AND AWARD PROCESS

Evaluation Criteria

Submissions will be evaluated based on the evaluation criteria below.

Ability of the idea to address the problem. The judges will review the submission and assess how well it mitigates the problem identified in the problem statement.

Ease of understanding. The judges will assess if the submission would be easily understood by the traveling public, including motorists, pedestrians, and bicyclists.

Applicability. The judges will assess the submission's applicability and transferability to various environments and roadways. For example, ideas that will only work on two-lane roads or in warm climates will not be scored as highly as designs that will work on any roadway class in diverse climates.

Feasibility for Implementation. The judges will assess the feasibility of the idea. They will consider the likelihood that the idea could be accepted by the transportation community and implemented on the nation's roadway. The potential cost of implementation, the ease of implementation, and the availability of materials can be part of the judges' considerations.

Review Process

The TCDC committee will screen each submittal to verify that it adheres to the contest guidelines. The committee will use the evaluation criteria to select up to 12 finalists to be displayed at a poster session during the 2018 Transportation Research Board Annual Meeting.

Those selected to display their submittal at TRB will receive an email by November 1, 2017 informing them of their selection.

Judging of Finalists

Finalists are expected to display a poster (prepared according to the guidelines used for TRB poster sessions; see: onlinepubs.trb.org/onlinepubs/am/2015/PosterGuidelines.pdf) that communicates their idea and addresses how it meets the evaluation criteria. The panel of judges will evaluate the posters at the TRB annual meeting on the day of the contest. The judges will represent the practicing transportation community. The first, second and third place winners will be selected by that panel of experts.

Awards

First, second, and third place will receive awards as specified in the following table.

Place	Award
First	Opportunity to present the concept in a “Traffic Talk” at the ATSSA Traffic Expo in San Antonio, Texas. Travel expenses for one speaker. \$1,500 cash prize. First place plaque.*
Second	Opportunity to present the concept in a “Traffic Talk” at the ATSSA Traffic Expo in San Antonio, Texas. Travel expenses for 1 speaker. \$1,000 cash prize. Second place plaque.*
Third	Opportunity to present the concept in a “Traffic Talk” at the ATSSA Traffic Expo in San Antonio, Texas. Travel expenses for 1 speaker. \$500 cash prize. Third place plaque.*
Honorable mentions	Certificate of Recognition for up to 10 honorable mention entries.

*In addition to the opportunity to present the idea in a “Traffic Talk,” the three place winners will be provided a (joint) exhibit booth to display their posters. The placing prize winners will be announced at the ATSSA meeting’s opening general session. ATSSA will also include an article in their industry magazine, *The Signal*, the placing winners and, with their agreement, a home town press release.

CONTACT FOR ADDITIONAL INFORMATION

For questions about the TCDC not addressed by this participation guide, please email Paul-Carlson@tamu.edu.

ATTACHMENT 1: Design Submission Form

**2018 Traffic Control Device Challenge
Submission Form**

Instructions: The following form must be completed and signed by the team leader on behalf of all named members of the team and submitted with your package. Please scan the signed form as a PDF and include as part of your submission package. Include contact information for each member. Attach additional pages as necessary.

TCDC Title: _____

Team Leader: _____ Affiliation: _____

Email: _____ Telephone: _____

Teammate: _____

Affiliation: _____

Email: _____ Telephone: _____

Teammate: _____

Affiliation: _____

Email: _____ Telephone: _____

Teammate: _____

Affiliation: _____

Email: _____ Telephone: _____

Lead Submitter's Signature

By signing this form, I acknowledge that the above listed participants have all agreed to the TCDC's submittal and if selected as a finalist, agree to display a poster at the Transportation Research Board Annual Meeting in Washington, D.C.

Lead Submitter

Date

Send submission forms for the 2018 Traffic Control Device Challenge to:

Paul Carlson, Co-Chair AHB50

Texas A&M Transportation Institute

2935 Research Parkway College Station, TX 77843-3135

paul-carlson@tamu.edu