

2021

Traffic Control Device Challenge



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2021 Traffic Control Device Challenge

2021 Theme: Innovative Traffic Control Device Strategies for Speed Management on Limited Access Freeways

OVERVIEW

The objective of the Traffic Control Device Challenge (TCD Challenge) 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 (TRB) Standing Committee on Traffic Control Devices (AHB50) and the American Traffic Safety Services Association (ATSSA).

The TCD Challenge is open to individual students or teams of students from high school, junior college, college, or university (graduate or undergraduate) that have an interest in transportation and an understanding of traffic control devices. Students in relevant fields such as transportation-, human factors-, and technology- related curricula are particularly encouraged to participate.

The TCD Challenge 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 during the 2021 TRB Annual Meeting. The three winning submissions will be invited to receive additional recognition at the ATSSA 2021 Annual Meeting (additional details below).

PROBLEM STATEMENT

The theme for the 2021 TCD Challenge is: ***Innovative Traffic Control Device Strategies for Speed Management on Limited Access Freeways***. In 2017, there were 37,133 traffic fatalities and 26 percent involved at least one driver that was speeding. Speed management includes strategies used to reduce speed-related fatalities and injuries, as well as improve the safety for all road users, including motorists, pedestrians, and bicyclists. While various speed management strategies exist, the statistics show there is still work to be done in this area. **The objective for the 2021 TCD Challenge is to devise an innovative traffic control device for speed management on limited access freeways.**

GUIDELINES FOR PARTICIPATION

Contest Eligibility

Submitter Eligibility

The TCD Challenge is open to individual high school, junior college, college, or university students or teams of students. All that is required in terms of technical expertise of submitters is a keen interest in transportation and safety, along with an understanding of traffic control devices.

TRB's 100th Annual Meeting will cover all transportation modes, with more than 5,000 presentations in nearly 800 sessions and workshops.

If selected as a finalist, the individual or at least one representative from the team is required to attend at their own costs the 2021 TRB Annual Meeting, which will be held January 24-28, 2021 at the Walter E. Washington Convention Center in Washington, D.C. The finalists will present their submission during the event, where a panel of judges will select the top three submissions. More information about the 2021 TRB Annual Meeting can be found at <http://www.trb.org/AnnualMeeting/AnnualMeeting.aspx>.

The top three submissions from the TRB Annual Meeting will coordinate travel to ATSSA's Annual Convention & Traffic Expo from January 31 – February 2, 2021 in San Diego, California. While at the ATSSA Expo, the top three submissions will present their ideas at ATSSA Traffic Talks, which are informal 5 to 10 minute stop-in presentations on the exhibit floor at the convention center (tentatively scheduled for Monday, February 1st). In addition, the top three submissions will have the opportunity to network with all manner of roadway safety personnel at various events, view the latest industry products and services, and raise their level of engagement with high-quality education and information sessions. ATSSA will provide full financial support for travel to its annual event for one person per team. Additional team members are welcome to attend but their travel will not be covered. Registration costs will be covered for no more than two team members. More information about ATSSA's 51st Annual Convention & Traffic Expo can be found at <http://expo.atssa.com/>.

ATSSA's 51st Annual Convention & Traffic Expo is the event for more than 3500 roadway safety professionals and transportation officials.

In 2021, the TRB and ATSSA meetings are scheduled within one week of each other. The TRB meeting begins on a Sunday (1/24) and goes through Thursday (1/28). The following Sunday (1/31) is the beginning of the ATSSA Traffic Expo. Travel arrangements to attend the ATSSA Annual Convention & Traffic Expo will need to be made quickly after the announcement of the winners at the TRB Annual Meeting. Please consider this when submitting an entry.

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 traffic control device or product, the original device or product 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 by individuals or teams from each school are allowed. Each idea 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 TCD Challenge.

Milestone	Date
Announcement of TCD Challenge	April 15, 2020
Submission Deadline	Oct. 1, 2020
Review of Submissions for Eligibility	Oct. 15, 2020
Notification of up to 10 submissions invited to TRB Annual Meeting	Nov. 1, 2020
Presentations and judging during the TRB Annual Meeting	Jan. 24–28, 2021
Announcement and recognition of winners	Jan. 24–28, 2021 (at TRB) and Jan. 31–Feb. 2, 2021 (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 TCD Challenge submittal must also include a signed submission form (not included in the submittal page total), included as “Attachment 1” to this guide.

The submittals will be reviewed using the criteria described below. Up to 10 submissions will be invited to the TRB Annual Meeting.

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 (e.g., motorists, pedestrians, and bicyclists, as appropriate to the topic).

Applicability. The judges will assess the submission's applicability and transferability to various environments and roadways. For example, ideas that will only work in rural areas or in warm climates will not be scored as highly as designs that are appropriate for all area types, climates, etc.

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 broadly. The potential cost of implementation, the ease of implementation, and the availability of materials can be part of the judges' considerations.

Review Process

The TCD Challenge 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 10 finalists to attend the 2021 TRB Annual Meeting. The finalists will be expected to attend the TCDC Challenge session that will be scheduled during the January 2021 TRB Annual Meeting at their own costs. At the TCDC Session, the finalists will be required to present their innovation and develop a poster that describes their innovation. Additional details will be provided to the finalists.

Judging of Finalists

The first, second, and third place winners will be selected by a panel of judges at the TRB Annual Meeting. The judges will represent the practicing transportation community. After the final three winners are announced at the 2021 TRB Annual Meeting, they will meet with an ATSSA representative to review the logistics for their travel to ATSSA's Annual Convention & Traffic Expo in San Diego, California, on January 31–February 2, 2021.

In 2021, the TRB and ATSSA meetings are scheduled within one week of each other. The TRB meeting begins on a Sunday (1/24) and goes through Thursday (1/28). The following Sunday (1/31) is the beginning of the ATSSA Traffic Expo. Travel arrangements to attend the ATSSA Annual Convention & Traffic Expo will need to be made quickly after the announcement of the winners at the TRB Annual Meeting. Please consider this when submitting an entry.

Awards

First, second, and third place will receive awards as specified in the following table. The top three winners will all receive an opportunity to present their concepts in a "Traffic Talk" at ATSSA's Annual Convention & Traffic Expo in San Diego, California.

Place	Award
First	"Traffic Talk" presentation. Travel expenses for one speaker. Registration for up to two speakers. \$1,500 cash prize. First place plaque. *
Second	"Traffic Talk" presentation. Travel expenses for one speaker. Registration for up to two speakers. \$1,000 cash prize. Second place plaque. *
Third	"Traffic Talk" presentation. Travel expenses for one speaker. Registration for up to two speakers. \$500 cash prize. Third place plaque. *
Honorable mentions	Certificate of Recognition for up to seven honorable mention entries.

*In addition to the opportunity to present the idea in a "Traffic Talk," the three place winners will display their posters in the ATSSA Pavilion and engage with industry professionals about their concepts. The placing prize winners will be announced at the ATSSA meeting's opening general session. ATSSA may also include an article in their industry magazine, *The Signal*, and with the approval of the winners, a home town press release.

TCD CHALLENGE ARCHIVES

For information on past TCD Challenge topics and winners visit <http://www.ahb50.com/category/tcd-challenge/>.

CONTACT FOR ADDITIONAL INFORMATION

For questions about the TCD Challenge not addressed by this participation guide, please email TCDChallenge@gmail.com.

2021 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.

TCD Challenge Submission Title: _____

Team Leader: _____ Affiliation: _____

Email: _____ Telephone: _____

Teammate: _____ 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 TCD Challenge's submittal and if selected as a finalist, agree to display a poster and make a presentation at the Transportation Research Board Annual Meeting in Washington, D.C.

Lead Submitter

Date

Send submission forms for the 2021 Traffic Control Device Challenge to TCDChallenge@gmail.com.