

Technology Advances Lead To Reduced Motor Vehicle Fatalities

University of Nebraska



According to the U.S. Department of Transportation, more than 38,800 people were killed in the U.S. in 2020 as a result of motor vehicle accidents. Hoping to battle back that annual statistic, researchers at the University of Nebraska-Lincoln (UNL) designed the next generation of steel barriers, a new crash cushion system called Delta™, in collaboration with [TrafFix Devices, Inc.](#), a company that is now manufacturing and selling the product.

“We hope it will save somebody’s life,” said Ron Faller, director of the Midwest Roadside Safety Facility, a research organization at UNL focused on highway design and safety. “That’s what it’s about—sending somebody safely home to their family.”

One of the Delta crash cushion’s distinguishing features is its side panels, which absorb kinetic energy during a crash and eliminate the need for complex devices commonly used in other barriers, such as hydraulic cylinders, cables and cartridges.

According to Faller, transportation officials have praised the cushion's simplicity, which requires minimal maintenance and is easy to install. The steel beam fender panels are easily replaced after hits.

Behind this simple design is a six-year industry partnership between Nebraska researchers and TrafFix Devices engineers. NUtech Ventures, the technology commercialization affiliate at the University of Nebraska and UNL Industry Relations, a university department that focuses on research collaborations with industry, worked with the teams to arrange an industry-sponsored research agreement and manage the patenting and licensing processes.

"UNL's reputation is unmatched in the world for our industry, and it's been an incredible development process for us," said Geoff Maus, vice president of engineering at TrafFix Devices, Inc. "The Nebraska team pushed the envelope beyond what I thought was possible."

For the Nebraska researchers, the feeling is mutual.

"TrafFix is a great partner and had a clear idea of what they wanted out of the device to make it commercially successful," said Bob Bielenberg, research engineer at the Midwest Roadside Safety Facility. "For us, the design challenge was the fun part."

Indeed, the product needed to meet the highest safety standards, be fully recyclable and cosmetically appealing, fit onboard tractor trailers and overseas shipping containers, and be cost-competitive to manufacture—making it more accessible for emerging markets.

"We took all this into consideration and have developed one of the best products on the market," said Brent Kulp, president of TrafFix. "As a global company that exports to more than 50 countries, we're excited to bring this product to the world."

This story was originally published in 2022.

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