

# KEEPING HIGHWAY CREWS SAFE IN MOVING WORK ZONES

INNOVATIVE PARTNERSHIP SUPPLIES TRAILER TRUCK MOUNTED ATTENUATORS TO INDOT



Gregory Highway sends TTMA-200 assembly kits to HSS each year, who then assembles them to the proper specifications and delivers them to INDOT.

A trailer truck mounted attenuator (TTMA) is a roadway safety device designed to protect work zones in the event of a work zone intrusion. Hitched to the back of a truck, the TTMA is designed to absorb the impact of a vehicle collision, minimize damage to work zone assets (equipment and/or personnel), and reduce the forces on occupants of the impacting vehicle. All of these events ultimately lead to saving lives on our roadways.

The TTMA-200 from Gregory Highway is an AASHTO MASH 2016 Test Level 3 (TL-3) crash cushion designed for use with a support truck in both stationary and moving work zones. The galvanized steel attenuator connects via a standard 8-ton pintle hitch mount, eliminating the need for a dedicated support vehicle. It can be used with most supporting vehicles weighing 10,000 lbs. or more and can be switched between different vehicles in minutes.

Its flexible configuration makes it easily adaptable to sweeping, salting, mowing and striping operations and can be equipped

with optional items, including arrow board stand, arrow board and hitch extensions.

"If a crew is out on the highway doing safe mowing or trash pickup, or anything pertaining to the roads, they'll often have a TTMA trailing behind them as they're moving down the road. Arrow boards attached to the attenuator make traffic aware that there are people in front and that the traffic needs to go around them," says Nicole Headlee, a manager with Highway Safety Specialists (HSS), which assembles TTMA-200s for Gregory Highway.

In the event of a vehicle collision with the attenuator, an oversized mandrel pushes into a smaller tube, splitting it into four strips of metal to dissipate the impact energy. This banana peel effect means the metal strips remain with the trailer and pose no hazard to adjacent traffic. This allows the trailer frame to serve as the energy absorber, which simplifies the design, reduces cost and minimizes the impact on the driver of the vehicle that causes the impact.



## CASE STUDY



HSS has assembled hundreds of units which are currently in use on Indiana roadways today.

### DELIVERING THE MISSION

Through a unique partnership with Gregory Highway and the Indiana Department of Transportation (INDOT), HSS has been helping bring these TTMA-200s to work zones across Indiana for more than 10 years. Gregory Highway sends TTMA-200 assembly kits to HSS each year, who then assembles them to the proper specifications and delivers them to INDOT. HSS has assembled hundreds of units which are currently in use on Indiana roadways today.

“We have a standard checklist that we go down to make sure each bolt is tightened to the right torque, that all the wires are in the right spots that they need to be, the panels in the back are in

the right spot, and all lights are working,” Headlee says. “We have to make sure everything is where it’s supposed to be before it even leaves our facility, because if not, we’re giving them a product that’s not built to do what it’s supposed to do.”

For more than two decades, HSS has been overseeing the assembly and production of roadway safety products. In addition to attenuators, they also produce a line of delineators, and supply a variety of other highway safety items including cones, barrels, sign stands, roll up signs, and more. As a part of its mission along with its umbrella organization, AWRC Industries, HSS provides employment services for people with disabilities.





Completed TTMA



“Our goal is to deliver a high quality product and excellent customer service. But in addition to all of those things, we also have a mission to provide employment opportunities to people with disabilities,” says Crystal Ashby, state director for AWRC Industries. “We want the quality of our product and the level of our customer service to stand on its own. But part of who we are as a company is our mission to make sure that that we’re helping to provide employment opportunities to a population of individuals who, in some respects, have been marginalized in other areas of their lives. We’ve got an exceptional team and they’re incredibly committed to providing a quality product. They do great work.”

### IMPROVING AND REFURBISHING

As part of a recent contract renewal with INDOT, HSS has added additional features to the TTMA-200s, such as added lights to improve visibility in adverse weather conditions, or pre-drilling holes to accommodate signage without impacting the structural integrity of the units.

“Contractually, we have 90 days from the time that we receive

an order with INDOT to the time it gets delivered,” Ashby says.

“We have made it a goal for ourselves to try and shorten that time-frame to within 60 days. In 2021, we averaged 30 to 45 days from receiving an order to the TTMA being delivered.” If all parts are in stock, the actual assembly of each attenuator with an arrow board takes two to three days. Once a few attenuators are complete, HSS will arrange for delivery to the field.

In addition to assembling new attenuators, the HSS team also refurbishes and recertifies attenuators that have been involved in a work zone crash. Headlee says the majority of damaged attenuators are repairable, and the assembly team enjoys hearing stories of how their attenuators function as intended during collisions to minimize damage and prevent injury.

“I’ve seen them really damaged to the point where we’ve had to repair everything except for the arrow board on it because it’s been smashed all the way up to the A-frame portion,” Headlee said. “But in those instances, everybody walks away. When the team sees it come back after it’s been hit and they get to help rebuild it, there’s a lot of pride because they know this saved somebody’s life.”