## CONTACT:

Betteroads Asphalt Corp. & Robles Asphalt
Angel Cartagena and/or Eugenio Montes & Moises Estrada
Street 845, Km 1.4, Cupey Bajo, Rio Piedras, PR 00926 PR-14, Bo. Coto Laurel, PR 00780-2170
(787) 413-4443
acartagena@emdi.net & moise_estrada2000@yahoo

## PROBLEM STATEMENT:

Lane shoulder drop-off is a very hazardous condition on the roadside of our existing rural network. Roadside departure related accidents are a major problem which affects safety of our road users. Safety edge provides an option to allow a vehicle to return safely to its normal path if constructed adequately. Training of asphalt crew prior to going to the field and using saturated surface sand as the material in the hopper, installing different safety edge devices in different pavers and laying down the mix simultaneously can be a cost effective and a fun way of training asphalt crew on how to properly lay down safety edge.

## SOLUTION:

Installing each safety edge device to be evaluated in a particular paver, while simultaneously operating each paver with sufficient saturated surface dry (SSD) sand deposited on the hopper; laying it down at the appropriate paver speed, and measuring the resulting safety edge angle in a pavement strip made of sand of 100 ft., can be used to evaluate the effectiveness of each safety edge device for the same SSD sand mix. This approach is cost effective since you do not need to permanently lay down hot-mix asphalt (HMA) or warm-mix (WMA) to actually verify if the safety edge device is installed properly. You can also clarify doubts with the asphalt maintenance crew and contractors that are using the safety edge device for the first time. You can take advantage of the opportunity by placing a poster next to each paver describing the major components of the safety edge device and its benefits, therefore transferring technology in a real-time setting.

## LABOR/MATERIALS/COST:

Minimum of two pavers, approximately 900 to 1,000 cubic ft. of SSD sand to lay down two 100 ft. strips that are 12 ft. wide and 4 in. thick; TransTech: Shoulder Wedge Maker; Advant-Edge: Ramp Champ; front end loader; sweeper to clean the job site after finishing the demonstration; digital level to measure the slope and angle of the safety edge; maintenance crew that will be doing the job in the field (with their corresponding safety vests and all related safety devices) and the poster outlining a description of the equipment and related specifications. The open space in a parking lot that will be rented for the demonstration (or free if provided by the particular county/municipality that is interested in the training); the cost of renting or loaning the pavers; front end loader and sweeper; and the time of each maintenance crew that attended the demonstration and the instructors time.

## SAVINGS/BENEFITS TO THE COMMUNITY:

The primary benefit can be attributed to the method of training the asphalt crew. In this approach the asphalt crew is trained prior to going into the field using this technique with SSD sand as the material in the hopper. The other benefit is that the training process provides hands-on and real-time training in a fun way. The second primary benefit of this approach is cost effective, since you do not need to permanently lay down HMA or WMA to actually verify if the safety edge device is installed properly. Furthermore, the instructor can clarify any doubts that the asphalt maintenance crew and contractors might have in the installation of the particular safety edge device and how to adjust the safety angle to meet the applicable state or federal specification of the project.