Federal Highway Administration
Every Day Counts
Innovation Initiative

The Safety Edge: Talking Points

Background

The Every Day Counts initiative was launched to identify and deploy innovation aimed at shortening project delivery, enhancing the safety of our roadways, and protecting the environment. Five technologies were selected for accelerating technology and innovation deployment, one of which is the Safety Edge.

What is the Safety Edge?

The Safety Edge is a paving detail that consolidates the pavement edge into a 30-degree angle to mitigate pavement-edge drop-offs.

The Challenge with Pavement-Edge Drop-offs

- One cause of roadway departure crashes, particularly on rural two-lane highways, is vertical pavement-edge drop-offs. These drop-offs develop during paving or over the life of the pavement as the material adjacent to the pavement settles, erodes, or is worn away.

- A pavement-edge drop-off can create problems after a vehicle driver drifts off the pavement and drops onto an unpaved surface and tries to re-enter the roadway. While attempting to steer back onto the pavement, the tires can start to rub intensely against the vertical edge of the pavement, causing tire-scrubbing. This can make it difficult for a driver to safely re-enter the paved travel lane. Drivers attempting to return immediately to the paved roadway can over-steer and lose control of their vehicles.

- The problem of pavement-edge drop-offs begins at the time of conventional construction. The new pavement typically adds a drop-off. These edges may initially be at an angle, but become more vertical quickly, as the unconfined edge material does not adhere to the pavement mat.

- Many agencies mitigate the drop-off by grading the adjacent unpaved material so that it is flush with the top of the pavement. This is the recommended practice; however, frequent maintenance is required to address the recurring issues of settling material, tire wear and erosion that occur at varying rates along the corridor.

- Without sufficient edge durability, the new pavement edge will start to crumble and deteriorate, creating edge raveling. In addition to weakening the pavement, edge raveling can create other safety problems.

The Safety Edge Solution

- An effective and inexpensive counter-measure to pavement-edge drop-offs is to install an angled pavement edge called the Safety Edge, during paving.
- Studies have shown that providing a 30-degree angled edge eliminates tire-scrubbing, making the pavement edge safer for drivers and cyclists.
- This angled edge can be easily installed at very low or no cost along the pavement edge during any paving project.
- Research has shown that with this angled edge, tire-scrubbing will not develop so that most drivers recover safely after encountering a drop-off.
- A commercially available shoe can be attached to a paving machine in a few minutes that forms the Safety Edge. As the paving material extrudes out of the paver, the shoe forms a consolidated pavement edge of the appropriate shape.
- The Safety Edge is relatively inexpensive, requiring very little additional time and materials for paving. The shoe itself is inexpensive relative to the cost of the entire paving project.
- The Safety Edge is also recommended for concrete pavements adjacent to graded material. There are some additional costs and special considerations for this application.

The Benefits

The Safety Edge is a proven technology with the following primary benefits**:**

- Saves lives
- Low cost
- Improved durability

The Safety Edge:

- Reduces crashes and saves lives by mitigating pavement edge drop-off
- Is a low-cost, systematic improvement applied during paving
- Improves durability by reducing edge raveling

Communicate that the Safety Edge is a simple but effective solution that can help save lives by allowing drivers who drift off highways to return to the road safely. The FHWA's goal is to accelerate the use of the Safety Edge technology, working with States to develop specifications and adopt this pavement edge treatment as a standard practice on all new and resurfacing pavement projects.

Contact Information:

To learn more about EDC, visit:
http://www.fhwa.dot.gov/everydaycounts

For training or more information on this Every Day Counts Initiative, please contact your local FHWA Division Office.

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