Stabilization Procedures to Mitigate Edge Rutting for Granular Shoulders

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ABSTRACT

An investigation is being conducted to develop stabilization procedures that will mitigate edge rutting for granular shoulders (Iowa Highway Research Board Project [TR-591]). Its objectives are as follows:

1. Determine the relative importance of localized, chronic edge rut issues compared to longer reaches of roadway with more general shoulder edge rut maintenance issues.
2. Develop a series of strategies for mitigating edge rut problems using various mixtures and gradations of granular materials and various stabilization agents.
3. Rate the performance of a subset of the abovementioned strategies by observing test sections.
4. Recommend strategies based on the results of test section performance, cost, and probable future maintenance procedures.
5. Assist the Iowa Department of Transportation in implementing the use of the recommended strategies.

Currently, investigators are executing tasks related to Objective 3. The proposed presentation will provide a progress report on the investigation.

Currently, two sets of test sections have been constructed: one on US 20 east of Waterloo, Iowa, and another on US 75 north of Sioux Center, Iowa. The granular shoulders on these high-volume roads develop edge ruts quickly and serve as a good test location for edge rut mitigation strategies. The US 20...
test sections were constructed in October 2008 and included calcium chloride, magnesium chloride, and sodium silicate. The US 75 test sections were constructed using Dust Lock®, a soybean-oil–based dust suppressant. Investigators will describe the process of selecting stabilizing agents for testing, selecting dosage and application procedures, and current performance.

**Key words:** edge rutting—granular shoulders—mitigation