HIGH FRICTION SURFACE TREATMENTS

PROJECT CASE STUDY

The Federal Highway Administration's Every Day Counts (EDC) initiative is designed to identify and deploy innovations aimed at shortening project delivery, enhancing the safety of our roadways and improving environmental sustainability. Building projects more quickly depends on the highway community advancing innovative practices to a level of routine use by highway agencies and contractors. One focus area of the EDC initiative is a pavement overlay option – High Friction Surface Treatments (HFST).

HFST are pavement surfacing systems with exceptional skid-resistant properties that are not typically provided by conventional materials. Through the placement of a thin layer of durable high friction aggregates as a topping on specially engineered resin or polymer binder, these aggregate systems provide long lasting skid resistance, while also making the overlay much more resistant to wear and polishing. In this way, HFST restores pavement friction surfaces where high traffic volumes have polished existing pavement surface aggregates and can also serve to mitigate vehicle speeds that exceed existing geometric designs for sharp curves and superelevations.

Case Study: Kentucky Transportation Cabinet

Roadway departure crashes composed nearly 70 percent of the crashes on Kentucky highway. Because these crashes tend to lead to injury or death, the Kentucky Transportation Cabinet (KTC) decided to treat these problem curves as top priority. For any half-mile roadway section having eight or more wet weather crashes over a 5-year period, the KTC proactively applied HFST using calcined bauxite for the aggregate if the pavement was in good condition.

KNOX COUNTY, KENTUCKY; US 25 SB LANE, AT ITS INTERSECTION WITH X KY 1629 – HFST INSTALLED IN APRIL 2011

The HFST was installed to address rear-end crashes at the intersection. The friction treatment was only applied on US 25 in the southbound lane, which has a downgrade approach. For a 3-year period prior to the installation, there were six wet weather crashes and 27 dry weather crashes (11 crashes/year). The crashes were mostly rear-end crashes. During the 1.3 years after the installation, there were two wet weather crashes and five dry weather crashes (5.38 crashes/year).

OLDHAM COUNTY, KENTUCKY; KY 22, MP4.36 4.44 HFST INSTALLED IN AUGUST 2009 TO TREAT ONE HORIZONTAL CURVE

Prior to the HFST, there were 53 wet weather crashes and three dry weather crashes observed over a 3-year period (18.67 average crashes/year). After the treatment, five wet weather crashes and no dry weather crashes were observed over a period of 3.18 years (1.57 average crashes/year).

For additional information, please contact:

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Every Day Counts (EDC), a State-based initiative of FHWA's Center for Accelerating Innovation, works with State, local and private sector partners to encourage the adoption of proven technologies and innovations aimed at shortening and enhancing project delivery.

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