

## STATE DOT CASE STUDIES ON SAFETY ADVANCEMENTS

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### ARKANSAS

#### HIGH FRICTION SURFACE TREATMENT TO MITIGATE WET PAVEMENT CRASHES

**Cost:** Three Jobs totaling \$9.7 million **Completion Date:** July 2019

**The Issue:** In Arkansas, precipitation is common and leads to wet pavement crashes on highways. The presence of rain amplifies factors such as decreased pavement friction, poor drainage, high speed, and lack of tire tread; thereby increasing the susceptibility to accidents. Some highway segments within the state exhibit a high concentration of wet pavement crashes, exceeding the statewide average rate.

**The Solution:** By employing engineering methodologies and targeted countermeasures, ARDOT can mitigate the frequency of wet crashes and provide better travel conditions across the state's transportation infrastructure. To address wet pavement crashes, High Friction Surface Treatment (HFST) has been used in specific locations. HFST is engineered to enhance pavement friction, particularly in areas prone to wet pavement crashes, improving vehicle traction and reducing the risk of skidding.

Curves and intersections typically are the most cost-effective locations for HFST. Through the application of specialized materials and advanced surface treatments, HFST significantly enhances the grip between tires and pavement, even in adverse weather conditions. In ongoing efforts to improve roadway safety, HFST is a valuable tool that warrants further consideration and implementation across the highway system.

To date, High Friction Surface Treatment (HFST) applications across 35 locations in three jobs within Arkansas have yielded significant reductions in wet pavement crashes. Through strategic implementation, HFST has proven to be an effective solution, delivering tangible results in terms of crash mitigation.

Recent data analysis reveals an 83 percent reduction in wet crashes involving fatalities (K severity) and serious injuries (A severity) and a 68 percent reduction in all crash types and severities. These reductions emphasize the effectiveness of HFST in enhancing pavement friction and improving vehicle traction, particularly in wet conditions. As they continue to expand the application of HFST and other innovative safety technologies, ARDOT is poised to further enhance roadway safety and protect the lives of all road users within the state.