

**Technology Deployment Initiatives and Partnership Program**  
**Request for Funding**  
**FY 2002**

**FHWA Strategic Goal Area:**

**Project Title:** Infrared Thermal Monitoring for Segregation

**Problem Statement:** In properly prepared hot mix asphalt, there often appear areas of segregation behind the paving equipment. This has long been attributed at least in part to temperature variations in the mix either as discharged from the truck or in processing through the paving machine, especially identified with dumping the wings of the hopper. Studies have shown that temperature variations affect density and consolidation of the mix at laydown and during rolling operations. It is difficult to get a clear understanding of the extent of temperature variation using conventional tools, such a thermometers. An easy to use and immediate readout device to provide an image of the mix temperatures is needed for construction of asphalt pavements.

**Proposal:** Infrared thermal imagery can display in colors the temperature of mixes providing a picture of the uniformity or variation in temperatures in the truck, or in the paving machine, or any of the open pick-up or mixing devices currently used as well as after laydown. It is proposed to use an infrared thermal camera to monitor transport and laydown of hot mix asphalt. It is anticipated that based on these measurements and displays, adjustments to the process can be verified as beneficial to reducing the appearance of segregation. With long term documentation, the direct impact on life cycle costs and durability of surfaces in relation to temperature variations during transport and laydown can be demonstrated.

**Benefits:** The infrared thermal camera may prove to be effective in monitoring temperature variations in mix transport and laydown, and identifying timely corrective action.

**Resources/Cost:** \$60,000

**Duration:** Two construction seasons beginning in 2002.

**Organization/Method:** Purchase infrared camera and experiment in house with detecting segregation

**Submitter:**

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