Abstract

The transportation infrastructure is the lifeline of the nation. An efficient and safe road network allows goods to reach the markets quickly, thus, stimulating economic activity and ensuring trade competitiveness. According to the Highway Statistics, in the United States, over 46,000 miles of interstate roads, combined with a network of almost 4 million miles of other roads, makes up the nation's lifeline. Each year, nearly five trillion dollars worth of goods are transported via the nation's road network via commercial trucks. Unfortunately, commercial truck traffic also contributes greatly to the cost of deteriorating highways across the nation. The increased costs of maintenance, combined with the diminished highway funds available, have meant that many roads are now in or rapidly approaching a critical condition. Industry experts estimate that there is currently more than a $300 billion shortfall to repair roads and bridges to an acceptable standard. For many years, states have been looking at developing a system that can be beneficial to the trucking industry, taxpayers, and the states, while helping to protect the infrastructure. It is the Weigh-In-Motion (WIM) technology which provides benefits to all parties involved.

Weigh-in-motion (WIM) technology has found increasing application in the highway and transportation areas for traffic data collection for the purpose of highway capacity analysis, aiding enforcement and, most recently, pavement design. The measurement accuracy of a WIM scale is critical. Many studies exist that address the measurement accuracy per se; however, the implications and effect of the accuracy in the context of pavement design have been rarely examined.

This study will provide a review of documents related to WIM including current technology and those in development. It will also report on the final demonstration project at the McAlester site, and make recommendations on future growth of WIM for the State of Oklahoma.